MOTHER, NURSE & AND INFANT

S. P. Sackett M. D.

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MOTHER, NURSE AND INFANT:

A MANUAL

ESPECIALLY ADAPTED FOR THE GUIDANCE OF MOTHERS AND MONTHLY NURSES,

COMPRISING FULL INSTRUCTION IN REGARD TO

Pregnancy, Preparation for Child-Birth,

AND

The Care of Mother and Child,

AND DESIGNED TO IMPART SO MUCH KNOWLEDGE OF ANATOMY, PHYSIOLOGY, MIDWIFERY, AND THE PROPER USE OF MEDICINES AS WILL SERVE INTELLIGENTLY TO DIRECT THE WIFE, MOTHER AND NURSE IN ALL EMERGENCIES.

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By S. P. SACKETT, M. D.

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PREFACE.

THE object of the author in writing this volume is to offer to nurses, and especially to those women who desire to make "monthly nursing" a vocation, the instruction which they need for that purpose, sufficiently illustrated and at a moderate price.

The book is written under a firm conviction in the mind of the author that a work of this character is needed at the present time—a work that combines some information to the monthly nurse in regard to her peculiar duties with considerable instruction in midwifery. He has many times heard inquiries made for a book of this kind and has not been able to point to one of the character desired. He has learned during the forty-five years that he has practiced medicine in a small city and its vicinity, that mother and nurse are often combined in the same person. The important duty of nursing the sick is so generally performed by mothers, that they also, as a class, require some scientific knowledge to be acquired by means of plain, practical instruction. And, in fact, throughout our country, every mother is liable, in an emergency, to be called upon to fill the office of an accoucheur.

For the professional nurse, such technical and accurate knowledge should be considered indispensable. The training schools for nurses in some of our largest cities are doing a noble work, and are elevating the standard of requirements for those who seek this field of true woman-

ly labor. But comparatively few of the many thousands who follow this vocation are able to attend such schools; yet they are willing and desirous to learn. Women seem instinctively to desire such knowledge. A proper effort to place within their reach the means of obtaining the necessary technical knowledge for their work, and especially for the work of the nurse who attends upon the mother in child-birth, will not, the author trusts, be deemed presumptuous. There are many excellent nurses, who have become so without the aid of training school or such a book as this, but it is hoped that this volume may make the acquirement of the necessary knowledge more easy and furnish ready information of value to those nurses who are most thoroughly perfected in their work. Physicians, they will find, stand ready to aid them. The attending physician, as a rule, may be depended upon to give such help as may be necessary to the understanding of the instructions here presented, and through their co-operation the number of earnest students in this department of womanly labor may be multiplied.

The author, during the preparation of it, consulted many writers upon obstetrics, medicine and nursing; and it is only because it would not be compatible with the size of this volume, that he has not made frequent references to these excellent works. But all that he has written has been founded on his own knowledge, experience, and observation, while it coincides with the expressed opinions of others who may be considered good authority. In only two or three things has the author ventured to advance beyond others.

S. P. S.

ITHACA, March, 1889.

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INTRODUCTION.

From the nature of the subjects treated in this work, the information given becomes of interest to every woman, and is not intended for the nurse of lying-in women only. It is believed that many young women will study it carefully, that they may be prepared for all the duties and responsibilities of life; some, perhaps, that they may be fitted for a vocation under certain contingencies. But many of the instructions are addressed particularly to mothers, because they especially will be able to make a practical application of the knowledge received. Hence considerable matter is inserted which is designed to be used by mothers in their daily life, and having only a slight bearing on monthly nursing. Necessarily, as the two objects are combined to suit the wants both of the mother and nurse, there is not as much order and system in the topics presented as would otherwise be desirable. I seek only to have my instructions in the form that will be most useful, and I believe that if mothers at the present time are sufficiently taught there will be no lack, a few years hence, of nurses who are fully competent to care for the sick, under the direction of competent physician. Hence I address myself, first,

TO THE MOTHER.

To those who are mothers, every part of this small book is especially commended. Upon the knowledge and skill and right action of those who have the care of children and of the household, it will depend that the right thing shall be done in such emergencies as are liable to occur. You must necessarily care for your children, both to guard them from sickness and to relieve their ailments. You must know the symptoms, at least, how to observe the symptoms, of diseases; and you may be called upon, in the absence of the physician, to act as midwife. Be especially careful to learn the instructions in regard to emergencies, because upon your knowledge and prompt action the lives of your dear ones may depend.

TO THE PROFESSIONAL NURSE.

This work is written for you, and to you is especially commended the modicum of medical knowledge herein contained. It is better for you to learn well what you read than it is to read very extensively. You will find sufficient in this small volume to demand your time and study for months, and even for years, in connection with your nursing. It is not expected that you will learn all the formulæ and prescriptions given. These are inserted partly that you may learn to read prescriptions in the various forms in which they are written, and partly that you may occasionally use one, after consulting with your physician. Sometimes you may copy one of them accu-

rately and use it at the drug store, consulting only with the apothecary.

But it will be of importance to you to obtain as much medical knowledge as is herein contained, though it is not designed to make you physicians. Do not act the part of a doctor until you understand every thing pertaining to Anatomy and Physiology, and the nature and properties of every medicine employed in the cure of disease. Of all sciences the medical should embrace the widest domain of knowledge, because ignorance here is fatal. But ignorance and thoughtlessness, and want of skill and adaptation, may be fatal in your particular province. The physician will generally tell you that the recovery of his patient depends as much upon faithfulness and skill and care on your part as upon his own medicines. Seek always to aid him, never to supercede him. If you learn midwifery, it should be with the design of co-operating with the doctor, and assisting him. You should be so educated that the physician will feel willing to leave a case of tedious labor in your care, instead of waiting at the bedside of the patient one or two days, and neglecting his other patients. Your educated service will be appreciated at such times by the doctor, as well as by the patient and her friends. You will do the duties of nursing well, and take upon yourself that part of the practice of a physician which he does not desire, and which you can do equally well. Your part will be an important one, and second only to that of the physician.

I expect, as the result of the study of this book, not that you will assume to be physicians to any greater extent than you otherwise would, but that you will act wisely and intelligently instead of confusedly, or blindly, in the emergencies in which you will be called upon to act,—that you will be, not merely attendants at the bedside of the sick, but, that best aid to the physician, the true nurse.

Do not claim to be doctor or midwife, or anything whatever that you are not. If a smattering of knowledge causes any affectation, it will only degrade you. Study physiology in the books commonly used; store your minds with the facts and instructions in this book; obtain additional knowledge in every way that is practicable. As you have opportunity, make practical application of the knowledge received, and you will commend yourself more and more to your sick or suffering friends.

PART I.

PREGNANCY AND CONFINEMENT.

CHAPTER I.

CONDUCT OF THE MOTHER BEFORE AND AFTER MARRIAGE.

THE physical treatment of children should begin, as far as may be practicable, with the earliest formation of the embryo. It will involve the conduct of the female even before her marriage, as well as during her pregnancy—the various contingencies which effect her in health as well as in disease. Very much depends on her to insure for her child a vigorous constitution, or to prevent a feeble frame in the child. She should not *enter* into the holy state of marriage with heedless haste; if she does, she will discharge its duties with inexcusable neglect. To constitute a mother, in the best sense of the term, requires a patient endurance of fatigue, and anxious solicitude, which will sorely tax the mother's strength. I would, if possible, diminish the toil and danger of childbirth, and relieve the fatigue and anxiety of nursing.

And let me, in one paragraph, give a hint to the husband: that the responsibility and care of the children is too much laid on the mother; she is overburdened. Let the father partake in the arduous and responsible duty of

their education. And let me hint, also, that the health and strength of the child depends upon the father as well as the mother.

MARRIAGE SHOULD NOT BE AT TOO EARLY A PERIOD OF LIFE.—I am not disposed to discourage early marriage, but I am decidedly opposed to a premature one. Marriage should not take place until the body is healthily and completely developed; to bear offspring prematurely endangers not only the mother's health, but it materially influences the health and well-being of the child.

We cannot fix rigorously the age at which the body becomes fully expanded. I am inclined to say it is at 20 in the female, and at 24 in the male; but original stamina, education, climate, mode of life, etc., have their influence, and may make an earlier or a later marriage proper.

The evil consequences resulting from precocious unions in this country are: diminished vigor and shortened life in the husband; faded beauty, blasted health, and premature old age in the mother, and a diminutive stature, debility of body and imbecility of mind, perhaps a strong predisposition to consumption, rickets, scrofula, etc., in the children.

MARRIAGE SHOULD BE WHEN THE PARTIES ARE IN HEALTH.—I do not say that every ailment should be a bar to marriage or child-bearing. It is possible that prolapsis uteri may be benefited by a pregnancy and parturition. But if a woman has prolapsis uteri, or other ailment, it is a poor preparation for the burdens of gestation, and good health is an important qualification for the responsibilities of married life. No learning can be of more importance to a young lady than to know how to preserve health, and how to restore it when lost, for we cannot reasonably expect healthy children from unhealthy par-

ents. There are numerous other complaints besides scrofula and insanity, inherited by children. If a wife is to be healthy and strong, she must use means; health will not come by wishing for it merely, and whether pleasant at first or not, habit will make early rising, temperate living, taking exercise, thorough ablution of the whole body, etc., easy. That state of vigorous health and strength which prepares a woman to bear strong and vigorous children, is attained not by idleness and luxury, and neglect of personal cleanliness, nor by tight lacing, the use of stimulants, nor by irregular modes of sleeping, etc., but by rising early, and taking early walks in the open air, and engaging in household labor, or other exercise during the day, going to bed betimes, living on an abundance of good, wholesome food, by daily ablutions, followed by rubbing the skin thoroughly, and in general by observing the laws of health. If a woman who has thus preserved her health, marry a man who has been equally careful to observe the laws of continence and hygiene, she may hope to be the mother of a healthy child, and a blessing to all.

THE CONSTITUTION OF BOTH THE MALE AND FEMALE should be good and strong. It is not enough that the body be well developed, if there is at the same time a very feeble constitution. Even if the children of such parents seem to be hale looking and robust, they do not attain old age—are very liable to die young. If there is only a predisposition to disease, such as is often inherited, it may be very doubtful whether the parties ought to marry. If there is only a disposition to habits of intoxication or dissipation, or to gout, madness, scrofula, consumption, etc., in the man, we may advise the woman not to unite herself to him, for these diseases do not show themselves until called into action by some exciting cause.

But we advise the woman, if there is any physical disability which renders her ineligible to the married state, that she should not pass it over lightly, or conceal it, and we would recommend to a woman who may have deformed pelvis, that she abstain from marriage, as she "may purchase the title of wife at too dear a price."

TEMPERAMENT is a matter of less importance in choosing a husband. It is said to be the case that in choosing a mate, a person inclines strongly to one unlike themselves. If it be true that a person of a nervous temperament has a preference for the sympathetic, the sanguine for the bilious, etc., it is probably nature imparts the liking that the offspring may combine the excellence of both, the defects of neither.

BLOOD RELATIONSHIP is not necessarily a bar to union. Cousins may marry when the family has traits of mental and physical excellence as a means of perpetuating them, but it is not best to develope, by repeated unions, a lurking disposition to disease, which may exist in any family.

MORAL AND MENTAL CHARACTER is of the greatest importance. It is not true that "the reformed rake makes the best husband." If he is not the prey of loathsome diseases, the results of a vicious life, his constitution is probably impaired, so that he cannot be the father of good, strong children. The only way that women can guard their own health, and preserve from degeneracy their offspring, is by having husbands of a different character from that of the debauched rake.

CONDUCT OF THE MOTHER AFTER MARRIAGE.

The mother is accountable for the health and intelligence of her first child; she must be careful of her own health before marriage and at the time of marriage, as well as for the succeeding time.

I will here state a few things which seem unimportant, and yet are of some little consequence. I consider that the great object of conjugal union is the transmission of life, and I cannot believe that anything is unnecessary or unimportant that has a tendency towards the perfect health or well-being of the child that is yet to be born.

DURING THE FIRST FEW MONTHS AFTER MARRIAGE the wife should seek to have bodily quiet, and mental calmness and serenity. The custom of hurrying the bride from place to place may properly be condemned. So we would have her avoid going into a whirl of excitement and pleasure—into a round of visiting and late hours—into close, heated rooms—into fashionable amusements—rich living and a want of rest—sitting in ill-ventilated apartments—quickly bolting unquiet meals—drinking wine, beer, or brandy, or other alcoholic stimulants—late rising in the morning—sleeping in close, badly-ventilated rooms—living in rooms that are kept dark—tight lacing—wearing thin clothing—worrying, and indulging in ill-temper.

She should avoid these at all times, but her future health and happiness depend so much upon her prudence and care during the first year of married life, that we may properly give these hints and cautions in regard to this particular time.

CHAPTER II.

CONDUCT OF THE MOTHER DURING PREGNANCY.

There are no signs of a fruitful conjugation, which in all cases indicate to the woman that she is pregnant. Some few seem to know the exact time ; in some instances there is faintness, or vertigo, that in these particular cases impress the fact upon the mind of the woman. But usually, within a month, the point is tolerably certain, she being assured by such signs as will be here pointed out. It now becomes her duty to be especially careful, not only for herself, but also for her offspring. Abortions frequently occur, especially in the first and last pregnancies, and in the first months of pregnancy, these should be avoided if possible.

The train of evils which follow when the habit of abortion is established, as well as the moral obligation she is under to preserve the life committed to her, should make her willing to endure the few privations and conformities which her situation imposes on her. She must avoid undue exercise of the muscles, such as long walks, dancing in hot weather, hastily running up stairs, lifting heavy weights ; she must avoid things that inordinately hurry the circulation, such as heated rooms, stimulating liquors, etc. ; she must not overload the stomach, or eat late suppers ; she must not take drastic purgatives ; must not constipate her bowels by taking laudanum, etc. ; must not

compress the chest by tight lacing; must not use strong tea or narcotics; must not lie long in warm feather beds, and must not engage in severe study, night watching, etc.

The pregnant woman need not indulge in a wayward or voracious appetite, and, although there is a tendency to fullness and fever, she need not necessarily be bled.

The pregnant woman needs fully as much food as usual, but she must avoid excess in eating and drinking. Ripe fruits, lamb, veal, fresh fish, milk, coffee, and, in general, every thing which agrees with the stomach may be eaten; the taste, as a rule, is a safe guide, and may be reasonably indulged. After the sixth month, she may properly eat four or five meals a day.

The best plan of treatment for one to adopt who has longings is not to give way to them, unless the longings be of a harmless, simple nature.

The CLOTHING of the pregnant woman should be suited to the season; but as the vicissitudes of the weather affect her more than they previously did, she should be dressed rather warm. In general, she should wear flannel drawers, especially during advanced pregnancy.

Many women have done themselves an injury by lacing tight to conceal their pregnancy. The dress should be loose and comfortable, nowhere pressing tightly or unequally.

Stays or corsets may be used, in a proper manner, during the first five or six months; they should be moulded to the shape of the changing figure, and must not depress the nipple or the enlarging breasts. The garters ought to be worn slack; tight garters are very injurious, and if the veins are enlarged or varicose, it will be necessary for her to wear an elastic silk stocking.

Moderate exercise in the open air is proper during the

period of pregnancy, and walking is a good kind of exercise; but very long walks, and dancing, ought not to be indulged in. Riding in a wagon over rough roads, and railway traveling, are objectionable.

BATHING should be practiced with great care. A warm bath is too relaxing; a tepid bath once a week is beneficial. Sponging the body every morning with lukewarm water may be practiced, and the skin should be quickly dried with a coarse towel. The temperature of the water may be reduced gradually until it is quite cold. A sitz bath may be used every morning, although it is best to sit in it but a few seconds. If it gives a slight shock, it will be immediately followed by an agreeable glow. Put a little warm water with the cold at first.

Ventilation is of the utmost importance. During the day time, the windows in every unoccupied room in the house ought to be thrown open.

Attention should be directed to keeping the atmosphere in the sitting and sleeping rooms of the house fresh. Many poor people sleep in a very small, close bedroom, and breathe an air that is really poisonous. The lady should see also that the house is kept light, that the drains are in good and perfect order; that the privies are frequently emptied of their contents, and that the drinking water supply be not contaminated.

SLEEP, by its sedative influence, and by the calmness of all the functions that attend it, has a favorable influence upon the disturbed nervous system of the mother, and upon the growth of the fœtus. Her bedroom out to be large and airy, and she should not have curtains closely drawn about her bed. The windows of the room should be opened during the day; the bedclothes should be thrown back, and everything ventilated; the bed must not be

loaded with clothes, and the bedroom at night should be dark, and as far as possible from noise. These things will tend to secure sleep; but if the pregnant woman should still be restless, and feeling oppressed and hot, she should perhaps admit more air into the room. Let her also attend every day to her bowels, that they be not allowed to become costive; perhaps eat cooling fruits, live on an abstemious diet, and if there is a feeling of faintness when she attempts to lie down, she should have a bed so arranged that her shoulders and head are elevated.

The pregnant woman ought to retire early to rest, and I would advise her to lie abed in the morning as long as she can sleep well. If she cannot sleep well, let her get up in good time in the morning, take a bath, or thorough ablution, a stroll in the garden, an early breakfast, and then perhaps a short walk, while the air is cool and exhilerating. A nap of an hour or two after that, upon a sofa or lounge, will prove very refreshing.

A TRANQUIL MIND is of the greatest importance. Forebodings of a gloomy nature should not be encouraged, as they often are, by relating dismal stories, etc. Unnecessary fear upon the part of the mother may have a bad effect upon the child, as may also the indulgence in unbridled anger, or yielding to temper,—perhaps may cause convulsions or hemorrhage, or even abortion. There is reason to believe that the imagination of the mother has an influence on the beauty of the child; and it is quite certain that cheerfulness and equanimity of mind contributes to the future good health of the child, and may even affect its disposition and mental traits.

CHAPTER III.

DISEASES OF PREGNANCY.

Pregnancy is not a disease. Many women enjoy better health during its continuance than any other time, and in general the pregnant woman is not quite as much exposed to contagious and other diseases. But there are certain disorders incident to pregnancy, of which it is necessary to speak.

MORNING SICKNESS, when it is only troublesome during the early part of the day, is generally borne without much complaint, or much medical care. Before taking any medicine for it, I advise that the lady try such simple means as the following: Let her take a cup of coffee or milk, and eat a few crackers or a biscuit, after washing her hands and face, and before rising in the morning; then let her remain in bed for about fifteen minutes, then dress quickly and take a short walk. If the sickness continues, let her eat freely of pop corn, and she may eat of this occasionally during the day, or whenever she is suffering from sickness, and let her partake of other food also during the day. Persistent sickness and vomiting indicates a disordered condition of the digestive apparatus, and requires appropriate remedies. Use successively the following: Formula 85, 104, 139, 140.

VOMITING is sometimes so persistent and severe that the stomach can retain nothing, or but very little food.

Of course, such cases demand the aid of a physician, and his efforts to give relief may be effectual, when the medicine here directed fails.

COSTIVENESS is another complaint to which pregnant women are liable. This is hurtful in its consequences, being not uncommonly the cause of fever, tenesmus, pain in the bowels, and abortion. Care must be taken to obviate costiveness by the use of such food as will have a laxative effect. The use of graham bread, oatmeal gruel, raisins, figs, grapes, roasted apples, baked pears, brown bread, cracked wheat, stewed prunes, and other varieties of farinaceous food and fruit, may obviate the necessity of taking opening medicines (F. 108, or milk of magnesia.) An enema is an excellent remedy, and every lady should have a good enema apparatus, by which she can administer an injection to herself, and if she suffer from constipation, she should take an enema twice or three times a week, and the early morning is the best time. The clyster may be warm water, or castile soap and water, of the temperature of new milk. It may be well to give occasionally an aperient to insure a thorough clearance of the whole bowels, and castor oil, salad oil, citrate of magnesia, seidlitz powder, stewed rhubarb, or an electuary of figs may be given. I sometimes direct that the woman should take every day a small dose of oil, in a cup of water gruel or oatmeal gruel.

SEVERE PAIN in the bowels and rectum is sometimes caused by a column of hard and indurated feces, which remain for a number of days in the rectum and colon. Not only pain but inflammation, and other serious ills, may result if such a condition is neglected. If taking injections does not suffice to give relief, manual assistance is necessary. The nurse should learn the art of removing

them if necessary; she should use a convenient instrument, carefully conducting it into the anus, or she may thrust her finger into the vagina to break the hard mass, and assist in its expulsion, then she should wash it out with repeated clysters.

FOR ABDOMINAL PAINS that are caused by its distention, and by the weight of the enlarged uterus, the woman should wear a bandage, or an abdominal supporter, adjusted to fit the abdomen, and made with proper straps and buckles to accommodate the increasing size of the abdomen. To relieve the pain, the abdominal walls may be rubbed with equal parts of sweet oil and laudanum.

Troublesome HEMORRHOIDS may be caused by constipation, and also by the congestion in the parts, and by the pressure made on the vessels of the part by the enlarged uterus. It is proper sometimes to use emollient fomentations and cataplasms. Relief may often be given by making firm and gentle pressure between the finger and thumb of each distinct tumor, till they are all compressed and returned within the anus.

In cases of BLEEDING PILES, blood comes away each time the patient has a stool. The patient ought to be as quick as possible in relieving the bowels, and should not at such times sit one moment longer than is absolutely necessary. If the piles are inflamed and painful, foment them three times a day, and for half an hour each time, with hot water containing a little carbolic acid—a one per cent. solution. Apply it by means of a sponge. Extract witch hazel may be used also, and relief may often be obtained by sitting over the steam of hot water for fifteen or twenty minutes. Simply put hot water in a close vessel, and sit over it. Sometimes the woman cannot sit in an ordinary chair, and she should sit either on an air cushion,

or a water cushion half filled with water, placed on the chair. (F. 107.)

DIARRHŒA is a less frequent attendant of pregnancy than constipation, and the latter is sometimes the cause of the former; in such cases an aperient is required. (F. 109.) Should the complaint remain after the operation of the laxative, opiates are proper, mixed with some mild astringent medicine, aromatics, antacids, etc. (F. 69, 74, 79, 80, 95.)

TENESMUS, and also diarrhœa, are common attendants on abortion, of which they are, indeed, sometimes the cause. Ipecac in half grain doses, with powdered opium, and given every six hours; or frequently repeated doses of opium may be needed. (F. 91, 92.) A flannel bag filled with hot table salt, and applied near the part affected, may give great relief to pain.

HEARTBURN is a common and often a distressing symptom of pregnancy. I would prescribe in such cases an abstemious diet, pepsin, ingluvin, and other medicine to help digestion; antacids and laxatives. (F. 71, 72, 74.) Calcined magnesia is good; prepared chalk is harmful.

It is not necessary for me to dwell upon the few ailments that occasionally afflict pregnant women that I have not yet referred to,—a few words must suffice. If a woman who is pregnant is apt to be FAINT, or to FAINT AWAY, I advise that she be laid down—that she lie flat on her back, with a pillow under her head—that tight articles of dress be loosened—windows raised—water should be sprinkled on her face, a few drops of aromatic ammonia may be administered, and perhaps smelling salts or hartshorn held to the nose. If it is simply fainting, it is not dangerous.

A nervous pregnant woman is sometimes subject to

PALPITATION OF THE HEART, especially when lying down. A small dose of aromatic ammonia will generally give relief.

If CRAMPS of the legs or thighs are troublesome, take F. 92, and tie a handkerchief around the limb, above the part affected, and let it remain a few minutes, and use friction. If cramp attacks the bowels or back, a hot bag of salt, or a stone bottle filled with hot water and wrapped in flannel, may be pressed against the part, and something similar should be placed to the sole of the feet.

If PRURITIS PUDENDI—irritation and itching of the external parts—are troublesome, use F. 195, 217, 220, and take frequently a tepid salt and water sitz bath, remaining but a short time in the bath. If the parts are hot and inflamed, and covered with an eruption, use either of the following lotions: F. 217, 195.

CHAPTER IV.

INSTRUCTIONS TO A WOMAN DURING THE LAST MONTH OF PREGNANCY.

1. DO NOT TAKE TOO MUCH EXERCISE.—You may get relief from some of your ailments by lying down considerably during the day. If there is lucorrhœa (whites), strangury (a frequent inclination to void the urine), incontinence (an inability to hold the water), pain in the hips with numbness of the inferior (lower) extremities—if the veins of the leg become varicose—if there are anasarcous swellings of the inferior extremities—if there is a pendulous belly, the woman ought not to so exercise as to produce fatigue. She may get some relief by sitting or reclining in the way that is most agreeable.

2. USE MEANS TO HARDEN THE NIPPLES.—Those women who have never had children ought to observe, before labor, whether there is a depressed condition of the nipples; whether they contract as the breasts increase in size. If they do, the condition can be corrected by wearing nipple shields on them. And to harden the nipples: For at least a month before labor, two or three times a day, rub them between the thumb and finger, and bathe them in tincture of myrrh or cologne water, in which a little alum has been dissolved. This will render the skin less sensitive, and avert the distress occasioned by the tenderness of the nipples. If there is especial reason to apprehend excoriated nipples, as there is when they are rough and nodulated like a strawberry or raspberry, make a solution of sulphate of zinc, one grain to the ounce of rosewater, in a wide-mouth bottle, and tilt the bottle upon the nipple, and allow it to remain there for a few minutes, several times every day. (F. 198, 217.) It is necessary also to protect the part from the pressure of stays and the friction of the flannel vest. The stays may be removed entirely, or the nipple may be protected by laying a soft linen rag, wet with water and cologne, around it so that the pressure will not be directly on the nipple. If the breasts are swollen or painful, the soreness will subside of itself before the commencement of labor. It may be well, however, to foment them with flannel wrung out of hot water, and support them as in a sling by a broad handkerchief, passing over the opposite shoulder.

3. PAY NO ATTENTION TO THE CHILLING AND "HORRIFYING TALES OF GOSSIPING BELDAMES."—A cheerful flow of spirits which arises from the hope of a happy event, inspires a woman with activity and resolution, and is the best preparation for the pains of labor. Do not give way

to gloomy and melancholy forebodings or indulge in idle reveries. Any person is your enemy who would exaggerate to you the dangers of labor; and let me here say to you, that if you read in this book of certain unfavorable contingencies, do not let your mind dwell upon them; they occur very rarely indeed, and I hope I have given such advice and instruction, and that you have been so cautious and careful that your chance is unusually favorable.

4. DO NOT EXPOSE YOURSELF AT THIS TIME TO WET AND COLD.—Do not go out in bad weather, and do not go to theatres and other crowded places at all. You are especially liable at this time to renal difficulties, and if you take cold, it will cause congestion of the kidneys, and more or less urinary difficulty. It is easier to prevent such complaints than to cure them.

5. TAKE BUT LITTLE MEDICINE.—In general you may rest in the hope that all your troubles will vanish after your confinement, and you can hardly hope to cure them sooner. But keep your bowels loose. If you cannot have daily passages by eating fruits, bread made from unbolted flour, or other laxative diet, take saline waters, compound licorice powder, etc., (F. 108.) If your bowels are constipated at the time that labor commences, take at that time an active cathartic (F. 109).

6. SEEK AND ENGAGE THE BEST POSSIBLE PHYSICIAN.—I do not know but the educated monthly nurse of the future may be well qualified to do all that is necessary in an ordinary natural parturition. But heretofore very few nurses trained in this country are thus prepared; perhaps the popular sentiment is against such an education. But you must always select a physician that you can confide

in and trust if an operation is necessary, or there is unusual difficulty.

7. IT IS GENERALLY WELL TO HAVE YOUR PHYSICIAN SEE YOU A MONTH BEFORE THE TIME THAT YOU EXPECT TO BE CONFINED.—Indeed, I would have you consult with your physician during the whole period of your pregnancy. You may get very full directions from this book, but still, where it is practicable, I advise that you consult with some skilled medical friend, who knows your idiosyncracies, and can suggest modifications of the directions as your own case demands. Specimens of your water should be analyzed each week during the last month, if there are any signs of albuminaria, etc., (especially if the face and ankles are bloated.) If there is inability to pass the water, it may be necessary to draw it with a catheter.

8. SUBMIT YOURSELF ENTIRELY TO THE DIRECTION OF YOUR PHYSICIAN.—Do not indulge in any opinion that may clash with his, even if that opinion is founded upon what is here written ; you cannot expect to know more than he. It may be that he will wish to examine you by palpation, etc., to know if the fœtus lies as it should do, as something may be done to correct a malposition by external manipulation if the effort is made early. No good physician will permit that your sensibilities should be shocked by an unreasonable demand. If you have studied this book diligently you will be prepared to converse intelligently with your physician, and you will understand and appreciate any directions that he may give. If you have taken any medicine prepared from formula herein inserted, you know, and can inform him what the medicine is ; this is better than it would be if you had taken patent medicine, of the ingredients of which you are ignorant. Consult with your physician in regard to the choice of a

nurse, as he will be likely to know those that understand their business, and that are in the habit of following the doctor's directions, or he may know whether the one you selected is now attending a woman that has contagious disease.

9. CHOOSE A GOOD NURSE.—You should have the best possible aid that the nature of circumstances will permit. Do not get a fine lady nurse that requires to be constantly waited on by a servant, and do not get a croaker that discourses of the sad and dreadful cases that have occurred in her experience. Do not get any one that is addicted to intemperance, or a potterer that is devoid of method and efficiency; that does the wrong thing in the wrong way, and that is always out of her proper place. Get a nurse that will not dose and medicate either the mother or child when they are under the care of a physician, or assume any duty or responsibility that belongs to him; that admits that the doctor is the one to give orders. Get one that never reveals the private concerns of her former employers; one that is not a mischief-maker, causing dissention and disagreement in the household. Do not get one that is young, if she is giddy and thoughtless and inexperienced, nor one that is old, if she is deaf and stupid. Get, preferably, a married woman or a widow; one that has at some time had the care of infants; one that has a pleasant countenance, and is naturally cheerful; one that has calmness and self possession, and firmness, and at the same time is gentle, kind, good-tempered and obliging; she should have a light step, a pleasant voice, a cheering smile, a dextrous hand, a gentle touch, and be gifted in cooking for the sick. By preference, engage a monthly nurse; she will not be so likely to come to you from a

case of scarlet fever or erysipelas, or other contagious disease.

If you can find a nurse of the kind described above, and if she be properly instructed and educated, she will be invaluable to you, and if she devotes her talents and her best energies to you and your infant, she should be liberally paid. But there are many such women all over the country, or will be when we can induce them to qualify themselves by study and special effort. But, as really good nurses are full of engagements, it may be necessary for you to engage her in the early months of your pregnancy; only stipulate in the start that you will be obliged to dispense with her services, if it happens that immediately preceding your confinement she had been attending a woman that had puerperal fever.

I do not say that you should necessarily engage a nurse that is educated as a midwife. But such a one is to be preferred even if you have a physician, and then the latter need not be detained from his patients for so long a period of time; and if the last stage of the labor is so rapid that the child is born before the doctor arrives, there need be no trepidation; she will know well what to do. Thousands are born in this country without the slightest assistance from a doctor, he not being at hand nor not being in time, and yet both the mother and babe do well almost invariably. As a rule the nurse that has studied and learned the most is the best prepared to discharge the duties resting upon her.

A NURSE MAY PROPERLY BE IN ATTENDANCE A WEEK OR MORE BEFORE THE TERMINATION OF PREGNANCY, if circumstances permit or require it. If present she will attend to the following things: Choose a good airy room for the lying-in chamber—one that can be well ventilated,

where the temperature can be kept at from 60° to 65°; one that is removed as much as possible from noise and disturbance, and where the patient need not be exposed to draughts. Provide needed articles of clothing for mother and child, and dressings for the bed; short gowns to wear over the chemise or ordinary night gown; a proper bandage of heavy muslin, as much as one and a quarter yards in length and fourteen inches in width. I prefer to have it of several thicknesses, and if it is quite long so that the ends meet to be folded it keeps in place better, and if it is gored it should be in such a manner that it is narrower at the lower edge than it is two inches above, so as to prevent it when adjusted from sliding upwards; the child's binder, preferably some woolen material about five inches in width and fourteen inches in length; the child's shirt (woolen or cotton, not starched); both a long and a short petticoat; a frock or slip; a shawl or flannel blanket; napkins and muslin diapers; also pieces of old muslin to be used to absorb blood and water. Provide also for dressing the bed, a piece of impervious oiled cloth, oiled silk, or rubber cloth; old sheets and comfortables; a piece of carpet; have in readiness a pair of shears or scissors, a small box of prepared lard or vaseline or a flask of salad oil, a package of pins one and a half inches in length, besides ordinary pins; tape, bobbin or wrapping twine; fine toilet soap; fine sponge for washing the child; soft linen or carbolated cotton for dressing the naval; a box of unirritating powder; a pile of towels, and a little aromatic ammonia or brandy to be used in an emergency. Let every thing be placed in such order that either may be found without hurry or bustle at a moment's notice. Hot and cold water should always be in readiness.

CHAPTER V.

DIRECTIONS TO THE MONTHLY NURSE.

If you attend a woman to whom the physician has already been called, you will thereafter be subject entirely to his orders. Whatever your opinion is, notwithstanding you have this book or any good authority for your opinion, if it seems to conflict with his directions, obey him; on him rests the responsibility and he is presumed to know what is best. But it is best that you should confide in each other—be on such relations that you can communicate to him anything you have learned about the case; be free to ask of him explicit directions and instructions. But your duties may precede his as well as accompany them, and I wish now to give special directions in regard to things that first demand your attention.

1. A nurse may properly provide a soft rubber catheter and also a syringe; this should be constructed so that it acts as an enema apparatus when one pipe is used, and as a vaginal syringe when the other pipe is applied. The holes in this pipe should be made so that the fluid injected is thrown backward.

It is important that this last direction be observed. I know of one instance where the vaginal pipe of a Davidson syringe was used, yet the fluid injected passed through the cavity of the uterus and through the Fallopian tube and entered the cavity of the peritoneum, causing severe pain and inflammation.

Besides the things already mentioned, I advise that there be furnished for use if needed a small blanket to receive the baby, a little bath tub, two chamber vessels, a bed pan, carbolic acid, fluid extract of ergot, and chloroform.

2. Being employed as a monthly nurse, do not (except very rarely indeed in an emergency) give any medicine at all or any stimulant that has not been ordered by the attending physician. Many women do not consider that labor is a natural process; it is painful indeed, and often lingering and tedious, but will go to a safe termination ordinarily without interference; any medicine given, unless very wisely administered, is much more likely to do harm than good.

3. Be still and noiseless as possible in doing necessary duties when your patient is trying to sleep, or when she is in special need of sleep. Sleep may be of great importance to her, and it may be put to flight by a little carelessness in renewing the fire, or in walking if you wear heavy and creaking shoes. Nurses at these times should wear slippers and not shoes.

4. If you attend the lady for a week or more before the doctor is called, there may be different ailments which you ought to note, at least enough to know their true significance. Perhaps she has false pains, and suffers so much that she believes that labor has commenced. You will decide partly from the character of the pains. False pains are colicky, though they may shift occasionally from the bowels to the back and loins and may extend to the hips and thighs. They come at irregular intervals, are sometimes violent and sometimes feeble, and they are particularly troublesome at night.

Spurious pains are often caused by disordered stomach

and may be somewhat relieved by attention to the diet and by mild aperients (F. 108, 109), or by applying a flannel bag of hot salt. If quite severe send for the doctor; do not give stimulants.

5. You may benefit the patient at this particular time when labor is approaching, perhaps without giving her medicine. Possibly she may feel very well for a day or two, and you will need to direct her exercise so that she does not do too much. You may keep from her unpleasant sights and seeming dangers; keep her room from being overheated; see that she does not have late suppers, too great a quantity of food, or anything that will produce a costive state of the bowels. See that her clothing is not too light, that she does not have strong tea or coffee, and that she does not lie too much in the bed. Secure as much as possible tranquility and equanimity, by guarding against gusts of passion, by keeping from her tales of horror and disaster which have happened to the pregnant, by teaching her that she has nothing to fear in regard to her child from the simple fact that some longing has been ungratified or that she was appalled at some frightful object, as such fears are seldom if ever realized; relieve her if possible of gloomy forebodings by informing her how rarely death happens after a well conducted labor.

6. If you give any medicine at this time give only that which is unirritating and mild.

7. Notice all the indications of approaching labor, the sinking down of the uterus in the pelvis, the contractions of the womb that come on without pain, or with slight pain, the change in the mind and temper of the lady, the augmented mucous secretion, &c.

8. Although there is usually a sensation of buoyancy and lightness accompanying or preceding the setting in of

labor, there may be on the other hand a feeling of anxiety and depression of spirits. Be very careful that you are not betrayed into any manifestations of impatience; no words but those of gentleness and encouragement and hope should fall upon her ear.

CHAPTER VI.

CARE OF THE MOTHER DURING LABOR AND CONFINEMENT.

TRUE LABOR PAINS are distinguished from the false by the fact that they are felt considerably in the back, passing down to the thighs, and by their coming on at regular intervals. At first they recur nearly every two hours, and they steadily increase in number and frequency, and are grinding in their character. There are other signs which denote the actual commencement of labor; there is usually a frequent desire to empty the bowels and bladder, perhaps shiverings or rigors unattended with a sensation of cold, sometimes a severe rigor, and these signs are preceded or accompanied or followed by a discharge of mucus and blood, called the show.

It is well now to send for the medical man, though if he lives near by it is only necessary to let him know that his services may shortly be required. If the patient suffers from nausea, vomiting, or chills and shiverings, let her know that they are only incidents of her labor and not unfavorable. Do not let her increase the pains or attempt to increase them in any way; it is much better that the labor should progress in a natural manner, even if it is very slow.

The preparation of the bed for the occupancy of the mother is now to be attended to. Cover the right side of the bed (as the patient will probably lie on her left side) with a piece of water-proof cloth or oil cloth; upon the top of this a sheet is to be placed and fastened with safety pins. Over this permanent dressing (on the top of the bed sheet) a neatly folded draw sheet is adjusted (and a second rubber and draw sheet is desirable), which, after the labor, can be removed, leaving the first clean and dry. This second draw sheet and rubber, and also a folded comfortable can be placed a little nearer the foot of the bed than the other, and after the lady's confinement she can be drawn up on the permanent dressing, and the temporary dressing can be easily removed. The other bed-clothes may be adjusted in the usual manner.

A piece of carpet can be thrown on the floor by the side of the bed, and it is well to have a hassock to put between the patient's feet and the foot-board or bed-post.

To dress for the occasion, a folded sheet should be adjusted around the waist (or, instead of this, or above this, a petticoat), to extend from the waist to the feet. (These will be removed after the delivery.) Then a chemise should be put on in the usual manner, and drawn up and folded high under the arms. She should then have on a clean nightgown, and over it a warm wrapper; this can easily be slipped off when she is about to go to bed, and the night-dress, if it is a long one, can be folded up under her arms, so that it will not be soiled.

The stays must not be worn, as that prevents the free action of the muscles of the chest and abdomen. The patient, during the first stage of labor, may walk about or sit down, and need not confine herself to the bed. She

may be allowed such food as she can eat, but should not be urged to take food.

THE BEST BEVERAGE for her is either a cup of warm tea, or of gruel or arrowroot. Cold water will not hurt her if she desires it. A patient ought, during labor, frequently to pass water. Some women, from false delicacy, do not attend to it, and suffer severely for it.

THE DOCTOR OUGHT TO HAVE SOME ROOM to retire to that the patient may be left very much to herself, and that she may have opportunity whenever she desires to of thoroughly emptying either the bladder or bowels. It is better that not more than two women be present with her, and even one of these can be dispensed with if necessary.

THE ROOM SHOULD BE KEPT QUIET.—Let the attendants be quiet and self-possessed, and let there be no noise, or excitement, or whispering. There may be ordinary cheerful conversation, but when the pains become very frequent and severe, it is best that this should be hushed enough to have the patient feel that the attendants are not neglectful of her, or careless about her. Cheerful words spoken to the patient of the blessed relief that will come after enduring so much pain will do good.

When the membranes are ruptured and the waters discharged, the doctor should be called in immediately. When he is present you will be subject entirely to his direction.

If the medical man cannot be present pretty soon, I advise any nurse who has diligently studied this book to make a digital examination, and ascertain if there is a head presentation ; if there is, there need not be any anxiety about getting a doctor.

If the child is born before the doctor has time to reach the house, let the patient be made to understand that there

is not the slightest danger ; and, for yourself, observe the following directions :

Ascertain if a coil of naval string be about the neck of the infant ; if there is, remove it immediately. See that it has room to breathe ; that there is not a membrane over its mouth, and that its face is not buried in the clothes or the discharges. If the child cries, give a minute's attention to the mother, to see that she is in an easy position, and for a few minutes make pressure with one hand over her abdomen. If the child does not cry the moment it is born, give it a smart blow on the back, sprinkle a little cold water upon it, and put your finger in its mouth to remove any mucus that may interfere with respiration.

After the child cries, and when no pulsation can be felt in the cord, tie and cut it. Tie with a strong and not too fine a string, about one and a half inches from the child's body, and cut so as to leave that portion of the cord attached to the child's body about two and a half inches long. Cut far enough from the ligature so that it will not be liable to slip off. The ligature should be drawn tight when applied, and it ought to be examined afterwards to know that it does not continue to bleed.

I shall here summarize, in a very brief way, what you are to do in the absence of the doctor : After the child is breathing properly and the cord is cut, the mother may receive your attention. If the placenta is not expelled spontaneously, place one or both your hands over the uterus, and by friction, squeezing and pressure there, you will probably cause enough contraction of the womb to start the placenta from its attachments. You may then make slight traction on the cord, pulling only gently, and it will probably come down ; as it emerges from the vagina gently twist or turn over the after-birth, and you will secure the removal of the membranes.

The soiled articles are now to be removed, a binder applied, the patient placed nicely in bed and kept quiet; no talking, no visiting, no excitement allowed.

The baby may now be attended to—be washed and dressed. Have at hand a bowl of warm water, a small quantity of lard or oil, soap, fine sponge, and the articles of clothing, including a binder, and by preference a piece of flannel for washing. It is well also to have a small tub large enough to dip the child in. If the child is much covered with the "vernex caseosa," rub it over with some unctuous substance, and then wipe it off with the flannel or some soft cloth, being careful at the same time that nothing gets into the eyes of the child, and being careful to remove all the cheesy matter from the angles of the joints, and from behind the ears. Have the water for the bath warm, but not hot; take hold of the feet of the child with your right hand and putting the left under its back and shoulders, lower it into the water, supporting its head by your arm. While supporting its head with your left hand, wash it all over, using toilet soap and (if you have it) a fine, clean sponge; then lift it out into a warm towel and dry it thoroughly. Dust with fine starch powder, made of wheaten flour, under the arms and between the legs, and dress the naval by using a soft piece of linen dipped in vaseline and having a hole in the center. It is well to put another piece of linen around the cord, which may then be turned upward or to the left side, and the binder applied. Some prefer to put absorbant cotton around the cord. The binder or belly-band should be made of flannel, and should be cut bias. Care should be taken to apply it tight enough not to slip, but too tight an application should be particularly avoided. All the garments of the child should be made subservient to comfort

and not to show; should be warm and not too small; should consist in part of flannel during cool weather. When dressing the child put one garment inside the other, and put the whole on over the feet. But few pins need to be used if the clothes be properly arranged; three pins are sufficient for the binder. The washing or dressing of the child should be done quickly; a little cold water should be given it; it should be all the time in a warm room, and may be laid where it is quite warm.

The mother may demand a little more attention before the child is applied to the breast. A folded napkin should at first have been applied to the vulva. Look to it and see if it is much soiled with blood. When it is, apply a clean one, and observe particularly that one is placed so that it is partly under her; observe if her bandage is well retained in its place, and if it presses well on the lower portion of the bowels. If the binder is kept well adjusted it does good; it is of no use if it is allowed to slip up from its place. A towel folded and laid over the lower portion of the bowels, under the bandage, is useful as a compress, and helps to keep the binder in place.

Everything should be arranged so that the patient can have rest and quietness; but before she goes to sleep put the child to the breast. If the nipple is retracted, an ordinary tobacco pipe may be used to draw it out so that the child can get hold of it. If the child draws on the breast, the milk which it obtains will serve to physic it, and it should be applied to the breast every four or five hours; nothing else need be given it, except perhaps a little sugar and water.

If necessary to induce the child to take the breast, a little sweetened water or sweetened milk may be applied to the nipple. While the child is nursing the mother may

lay upon her side, and receive the child upon the arm of that side upon which she is lying. Perhaps, in order to draw out the nipple so that the child can grasp it in its mouth, it may be necessary to use some bottle with a flat, smooth mouth; fill the bottle with hot water; after a minute, empty it and place the mouth of the bottle immediately over the nipple; as the bottle cools there will be sufficient suction to elevate the sunken nipple.

Soon after the termination of the labor the woman may partake of some light food—tea and toast, panada, or anything of a light, unirritating character. From the very first, under ordinary circumstances, the woman may be permitted to change her position as she may desire, from side to side, or to be propped up in bed. Before going to sleep she ought to urinate—in a lying position, if so inclined, or she can be raised up and supported in a sitting position for a few minutes, if she desires to be. The patient must not be allowed to exert herself, or remain too long in a sitting posture. But I have never known a woman to be harmed by being raised up and sitting for a minute at this particular time.

Unless there is unusual suffering from after-pains or hemorrhage, or something that requires the attention of the physician, the patient will now be desiring and seeking sleep, and everything should be arranged for this object.

CHAPTER VII.

DIRECTIONS TO THE NURSE DURING THE MONTH.

The nurse will receive from the medical man such directions as the peculiarities of the case seem to demand, but I deem it proper here to give some general instructions. First, in regard to

CARE OF THE MOTHER.

Rest is essential to the mother during the month. She should remain in bed nearly all the time for at least two weeks, and should not return to her household duties under a month. Perfect tranquility is essential, that the womb may resume its former size and situation, and that inflammation, ulceration, prolonged debility, pain and excessive discharges be avoided, and that a good form be preserved. As a means of preventing a flabby, pendulous belly, she may also, when she does walk around, wear a utero-abdominal supporter or a well-fitting bandage. If a bandage is worn it should be made of strong linen, cut bias, setting snugly to the form, but not exerting unpleasant pressure. Its breadth should be from twelve to eighteen inches.

The diet of a nursing woman should be both light and nourishing. I would suggest for the first day well-boiled gruel, bread and milk, panada, tea, dry toast and butter, or bread and butter. For the second day, beef tea may be added (F. 65), and she should be served with food four

times ; the third day she may eat a little chicken or game, and mashed potatoes or rice pudding, and on the fourth day she can partake once of mutton or beef. Arrow root (F. 44), with these articles mentioned, may form part of her diet thereafter, but she may partake of such articles of her former diet as are wholesome and nourishing. The woman must not be starved ; she demands food that will allow her to recuperate her strength. Give her as nutricious food as she has appetite for, and can easily digest and assimilate. (F. 58.)

For a BEVERAGE give toast water, barley water, and milk with the chill taken off and a little salt added, tea, cocoa, or chocolate made with one-half milk, new milk and water, cacao and broma, made with a large proportion of milk. Either of these may be freely used as a drink. I have always allowed my patients to drink freely of water from the first, and an occasional cup of coffee is not harmful. When the mother experiences any inconvenience from any articles of diet or drink, she should not hesitate to abandon them, for if they disagree with her they will also disagree with the child. (F. 12, 18, 23, 52, 54, 57, 61, 62, 65.)

The LOCHIAL DISCHARGE, which occurs directly after a lying-in, is at first of a reddish color, and gradually changes to a brownish hue, and afterwards to a greenish shade. It is necessary that there should be some discharge to continue for a week, and it often continues for three weeks more. In some cases it has a disagreeable odor.

ABLUTIONS and cleansings are very necessary at this time. The parts should be carefully cleansed every day, and it is never amiss to use for this purpose a weak solution of chlorinated soda, or carbolic acid, or permangenate of potassa, etc., (F. 153.) They may be used quite weak at first, and afterwards of greater strength, if they do not

cause smarting. Tar water is excellent for an injection. The woman should daily assume a position that will facilitate the discharge of the lochia; sometimes get on her knees, or she may occasionally lie on her face and stomach. There should be no bandages applied so as to confine the secretions. A soft sponge and warm water may be used for ablutions at first, or the parts may be bathed with warm water and oat meal gruel; after bathing they should be dried with warm, dry towels; they may then, by means of a piece of linen rag, be anointed with salad oil or vaseline, or other bland oil. Once or twice a day the vagina should be syringed out with some injection. (F. 153, 155.)

TO WASH OR CLEANSE the patient so that the pores of the skin in every part are free and unobstructed, a soft napkin wet with warm soap and water, should be passed underneath the bedclothing, and she should be rubbed all over without any exposure to a draught of air. In some way she should take a sponge bath every day.

The CLOTHING which a patient will wear immediately after a labor has been already indicated. As some garments worn during labor are not necessarily soiled, they may be worn until the third or fourth day, when the dress should be changed. This may be done without tiring or exposing the patient. Without raising her up you can pull the bedgown down from over each arm, and after removing it from under the body, you can draw down the chemise and remove it from below. You can place her arms in the sleeves of the clean chemise, throw it over her head and pull it down; and put on a clean bedgown in a similar manner, or both may be put on at once.

The BED CLOTHING as well as the body linen should be changed frequently. In changing the upper sheet it should

be pulled off from below, and the clean one can be carried down in its place without removing the other bedclothes, by plaiting the lower half of it. To put on a clean undersheet, plait one side of it, and place that under the patient while she lies on her side, then let her turn on her back or other side onto it, and draw out the plaited part. Care of this kind is necessary until she is able to sit. Have the sheets well aired, and have a proper temperature in the room.

THE LYING-IN ROOM should always be kept well ventilated and rather cool; it is injurious to the patient to have the room kept at a high temperature. Perhaps the ventilation can be secured by having a little fire in the room, and by occasionally leaving the door of the apartment ajar, at the same time being careful to guard against draughts. But visitors remaining in the room, or any additional number of persons, serve to vitiate the air, as well as to prevent the necessary repose of the patient. A sensation of chilliness may be felt by the woman after delivery, and her feet may be cold; if they are, something warm should be applied to them, and sufficient clothing should be on the bed; but afterwards be careful not to overload her with clothes, as well as to avoid having the room overheated.

TOO MUCH LIGHT in the room may be injurious to the eyes of the mother or child, and it is often necessary to darken the room somewhat for a few days.

The lying-in woman will usually be confined to her room for two weeks. After the first fifteen days she may very properly remove to another room adjoining, or near at hand, and during her absence her room and bed may be ventilated by throwing the windows wide open and throwing the bedclothes back. Ordinarily she may, at the end

of three weeks, take her meals with the family, but she ought still to lie down occasionally to rest her back. At about this time she may take an airing in a carriage, if the weather be fine.

All lying-in women ought not to be treated alike in regard to DIET, etc. While a light, unstimulating diet is best at first in ordinary cases, the weak and delicate require good, nourishing food from the commencement, such as beef tea, chicken broth, mutton chops, eggs, etc., (F. 57, 58, 59.) Oatmeal gruel increases the secretion of milk, is nourishing and easily digested, at the same time it is simple and bland, and proper for those that are corpulent, or strong and robust, and the same may be said of good cow's milk. But, as the healthy mother furnishes daily from a quart to a quart and a half, she needs some meat to keep up her strength. Never give stimulants to increase the woman's strength, or to increase the quantity of milk.

In some cases, after a severe and lingering labor, there is RETENTION OF URINE. If the bladder cannot otherwise be emptied, the catheter must be used every six or eight hours.

The bowels are usually costive after a confinement, and I prefer to give a dose of castor oil the third day. If this or some other aperient is not given, enemas should be administered sufficient to cause evacuations.

The care of the MOTHER'S BREASTS is important. Before the milk is abundantly secreted, she should not be fretted by very frequent ineffectual attempts at nursing, though it may be necessary to draw out the nipple by means of a breast pump. The milk should be drawn out when the breasts become full and distended, and they should not be allowed to remain hard and sore. Apply fomentations ; cabbage leaves, wilted in hot vinegar and

water, or warm solution of carbolic acid, one part to eighty. If they continue to be swelled and painful use F. 221, 223. It may be necessary to make gentle pressure upon them by means of strips of adhesive plaster, or by a sort of jacket or bandage, that should be prepared especially for the purpose. When the breasts are closely bandaged they should be supported on each side by pads of cotton, so that the pressure will be made equally upon them.

Delay in applying the child to the breasts is often a cause of swelled breasts. After it has been fed for a few days it may refuse to nurse, and if it does nurse the nipple may be quite tender. But, unless for some cause the secretion is to be checked, the effort should be made every two hours to induce the child to draw. You will be more successful in these efforts if you can reduce the heat and swelling. Rub the breasts every four hours with good, warm olive oil, vaseline, or camphorated oil, and keep the excoriated nipple thickly coated with sub-nitrate of bismuth.

The breast should be rubbed, and the child should be nursed regularly, although I do not advise that the child or the mother should be roused from their slumbers ; it is better to delay for awhile the usual effort. But, even at first, a child can be nursed with considerable regularity every hour and a half during the day, and twice during the night ; and it should be applied alternately to either breast, even if it seems to prefer one to the other.

It is often necessary to wash the breast and nipple with warm water, and dry it with a soft napkin, before applying the babe.

During all the time that the mother nurses the child, the MIND OF THE MOTHER exerts an influence on the latter through her milk. If the mother's mind is very much

disturbed by any apprehensions, fears or anxieties, these perturbations will not only be likely to check the flow of milk, but will alter its quality, and perhaps render it hurtful and dangerous to the infant. The nurse should guard the patient as much as possible from anything causing nervous agitation, fretting, anger, grief, fear, sudden terror, or great anxiety, as these are injurious to the mother, and may be harmful and fatal to the child. Equanimity and cheerfulness of mind on the part of the mother are important at any period of her pregnancy or nursing. I will now give more particular directions in regard to

THE CARE OF THE CHILD.

THE FOOD OF THE CHILD, if it is necessary to feed it at first, may be one-third of new milk and two-thirds of warm water, slightly sweetened. It is not necessary that it should be fed for at least eight hours after birth, and at first the quantity fed it must be small. Except in rare cases the milk furnished by the mother will come soon enough, and in sufficient quantity to supply the wants of the child, and it is best for both that the child should draw it when secreted. For the instruction of the mother, as well as the nurse, I here quote a paragraph upon the nourishment and feeding of the child, not only of the newborn, but also of the subsequent months :

"No form of artificial nourishment can compare with that furnished by the mother. Women should know and consider the probability of disease and death occurring from any other mode, and the difficulties and annoyances to be encountered in the use of artificial food. As a further inducement to her to nurse her own child, she should know that her offspring is sure to imbibe with its milk, deep, earnest affection. The mother who can nurse her own offspring should commence within eight hours after delivery, and in the mean time no trash should be

put in its mouth to still its cries, or for any other reason; if it has not been surfeited, it will be disposed to take the breast. It should be placed to the breast before they are gorged with milk, for at that later time the flow is less easy, the parts are more irritable, and the child sucking with greater power, we are more likely to have, as the result, irritated nipples. Nature prompts all animals to suck their mother soon after they are born; we are less liable to have sore, irritated, cracked nipples, and there is less liability to infantile colics, etc., if we follow the guidance of nature and instinct."

As soon as possible accustom the child to the habit of nursing every two hours. If there is a proper interval between the times of nursing, the child draws with more avidity, actually empties the breast, and obtains that part that contains the most cream. Endeavor also to have the intervals longer at night, so that, from 10 P. M. to 6 A. M., it nurses but once or twice. Still, if it wakes every two or three hours, demands its supply of nourishment, and you cannot otherwise quiet the child, you must indulge it. Do not accustom the child to sleeping on the mother's breast. If it sleep in its own crib or bed, properly clothed and protected, it is less liable to have its rest disturbed. Avoid the custom of having a young child sleep with old and sickly persons, and also of having them sleep in ill-ventilated rooms, and of covering the child's face as it sleeps. There is danger that a child may die from want of pure fresh air, from having its face pressed tightly in the embrace of the person with whom it sleeps, from the multiplicity of its clothes, and from the mass of bedclothing used by the mother, as well as from improper food. A child should never be covered to sweat by reason of the warmth of its clothing, or of that of the apartment.

If the mother does not enjoy good health, it may be better for her not to nurse the child at night, but to have it fed once or twice with a little diluted cow's milk at night, and to nurse it during the day.

The following have been named as CAUSES WHY THE MOTHER CANNOT PROPERLY NURSE THE CHILD :

1. When she cannot have a sufficient quantity of milk.

2. When the supply falls off from some defect which is not remediable.

3. When there is a strong venereal or scrofulous taint in the constitution.

4. When suckling produces an active or painful disease in the mother, as colic, etc.

5. When the mother is subject to great nervous debility ; possesses an irascible temperament, and cannot avoid grief and sorrow ; and also when she is suffering from certain hereditary chronic diseases.

WHEN A MOTHER CANNOT SUCKLE HER CHILD, if circumstances will allow, a healthy wet-nurse should be procured. Choose one that is of a healthy family ; ascertain that there are no eruptions on her skin, or if there be other disease ; if she have a plentiful breast of milk, and if it be of a good quality ; if she has good nipples, and if her child is born near the time that the one was that she is to nurse. Do not get a nurse that menstruates during suckling, nor one that has a child which is unhealthy, or has a sore mouth or blotches upon the skin.

Very feeble new-born babes cannot take the breast sometimes. In such cases cow's milk, water and sugar (F. 1) may be given in small quantities at a time, but frequently repeated. If it takes only a teaspoonful at a time it should be repeated every half hour.

Many mothers are unable to obtain the services of a

wet-nurse. The milk of a cow is the best substitute, and when this is of ordinary richness, it may be diluted with an equal quantity of water, or thin barley water.

The following are leading principles to guide in giving infant food :

1. Aliment should always be presented to the infant stomach in a fluid form.

2. Bread and other farinaceous substances are generally indigestible in the infant stomach, and may better be excluded from infant feeding.

3. Cow's or goat's milk, when pure and modified so as to resemble as much as possible human milk, will generally be found sufficient without any other help to nourish the new-born infant.

4. If cow's milk is used at first, diluted with twice as much water and slightly sweetened, the proportion of water must be gradually lessened, until after six months the milk may be given undiluted.

5. When good milk from one cow cannot be obtained, and the child does not thrive upon the milk used, condensed milk may properly be substituted.

6. There are various forms of infant food referred to in F. 1, 2, 3, 4, 11, 28, 45, 49, and if one of these is tried and proves satisfactory, it will not be advisable to try new kinds of infant food which are at the present time offered for sale. Milk should be the basis of all infantile food ; neither starch, dextrine or glucose sufficiently nourishes without it ; but we may use one of these foods without milk for one or two days, in unsettled state of the stomach, with good results. (F. 61.)

THOROUGHLY WASH THE BABE EVERY MORNING from head to foot, using a large wash bowl or nursing basin, half filled with water. First wet the head, then immedi-

ately put the body in the bath, and with a sponge or piece of flannel, cleanse the whole body, particularly the armpits, groins, and between the thighs. The skin, after being thus cleansed, must be quickly and thoroughly dried with soft towels, and the parts liable to become sore, powdered ; then all parts of the body and limbs should be gently rubbed. During all the time, when the child is but a few days old, it should not be exposed at all to the cold. The water for its bath should be slightly warmer than new milk, and the time occupied in the bathing should be short. Each time, after a passage from the bowels, the parts should be washed with warm water, and if there is any chafing the calamine powder should be applied.

The naval string should receive the attention of the nurse ; within an hour of the time it is at first tied, she should examine the dressing to see if there has been any bleeding. If it bleeds, and the doctor is not at hand, retie with a stout cord, drawing it quite tight. Each morning, when the child is bathed, lift up the naval string with the rag dressing and insert a little nice fresh tallow under it. When it is loose remove it, but use no means to cause the separation. The naval is sometimes a little sore, but seldom needs any dressing more than simply vaseline or tallow.

At night a child should be entirely undressed, and its clothing replaced by other garments, those that are loose, light, and sufficiently warm for it while it is under the bedclothes. For a very young child the proper night-dress is a loose slip ; when older, a pair of drawers, fitting up well around the neck and covering the body and limbs, is a good article. The clothing worn during the day should not be worn at night, and the clothing when soiled should be immediately changed. Whenever the child seems dis-

posed to sleep, this should be encouraged. Never arouse a child suddenly from its sleep. Be careful that there is no unnecessary noises to disturb its sleeping. Time the bathing and dressing so that the little one may not be unnecessarily disturbed. But never give soothing syrups, anodynes for infants, or other nostrums to induce them to sleep. If the child is restless, endeavor to ascertain if there is not some cause that can be removed, such as tight clothing, etc.

PREMATURE INFANTS may, under favorable circumstances and assiduous care, live and thrive. Immediately after birth the child should be placed in a warm bath, and then wrapped in cotton. The baths should be warmer than usual, and must be frequently repeated. Awaken the child every one or two hours to feed it. Milk (woman's milk is the best) must be given it by a teaspoon. With a view to the better development of the lungs, it may be excited to cry by a slight irritation. Do not bring such children into the open air for several months after the birth, as their passages are readily affected.

PART II.

ANATOMY AND PHYSIOLOGY

OF THE FEMALE ORGANS AND FŒTAL DEVELOPMENT.

CHAPTER I.

OF THE PELVIS.

The formative organs of generation are situated within a large cavity, called the cavity of the pelvis, the walls of which are composed of bones and soft parts. This basin (in Latin, *pelvis*) is an irregular, long cavity, situated at the base of the spinal column, and above the inferior extremities. In the adult the bony pelvis may be divided into four parts or bones, viz : the os sacrum, two ossa innominata, and the os coccygis, but in early life they are more minutely divisible.

THE SACRUM.

The sacrum (Fig. 1) terminates the vertebral column, and is perhaps the most important bone in the pelvis, obstetrically considered, as it enters largely into the various deformities of the pelvis. In the adult it is of a triangular shape, the base of the triangle being above and inclining forwards, the apex below and somewhat backwards ; its length is from four to four and a half inches ; its breadth about four inches, and the greatest thickness, two and a

half inches. The internal surface is concave to the amount of half an inch, crossed by four transverse lines, marking the former division by cartilage; here are four pair of holes, through which pass numerous nervous filaments, which afterwards form part of the great sciatic nerve.

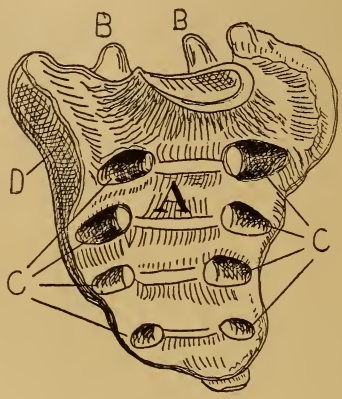


Fig. 1—A represents the internal or anterior surface of the sacrum.
B B " articular processes.
C C " anterior sacrel foramen.
D " articulating surface.

It is placed at the posterior part of the pelvis, where it appears like a wedge forced in between the ossa innominata, immediately below the vertebral column and directly above the coccyx.

THE OSSA INNOMINATA.

The os innominata (nameless bone, Fig. 2) is of a very irregular figure, and the pair occupy the lateral and anterior parts of the pelvis. The external or femoral surface is turned backwards and downwards, as well as outward; at its superior part, inferiorly it looks downwards. To-

wards the front, the external face presents the cotyloid cavity, or the acetabulum ; a little more in advance and below is the subpubic or obturator foramen, which is nearly closed by the obturator ligament.

Fig. 2. Right os innominatum, external surface.

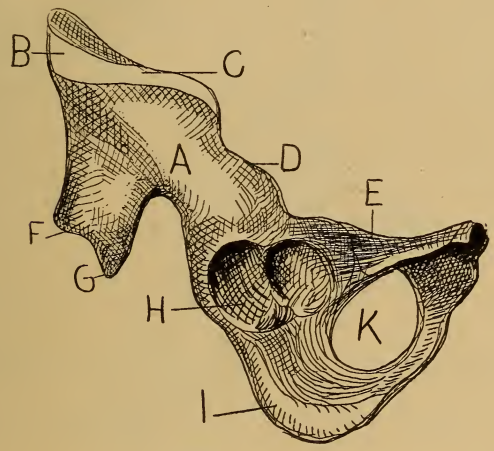


Fig. 2—Represents the external surface of the right os innominatum. A. The external iliac fossa ; B, crest of the ilium ; C, anterior superior spine of the ilium ; D, anterior inferior spine of the ilium ; E, horizontal branch of the pubis ; F, posterior superior spine of the ilium ; G, posterior inferior spine of the ilium ; H, acetabulum ; I, ischium ; K, obturator foramen. At birth the haunch bone, or os innominata, is composed of three bones connected by cartilage. Fig. 3.

The superior portion of the bone is characterized on its abdominal or internal face by a large excavation called the internal iliac fossa (Fig. 4.) This portion is terminated below by a large rounded and concave line. The inferior (lower) portion presents behind a nearly triangular plane surface ; near the middle of this is the obturator foramen, and in front is the internal face of the os pubis.

Fig. 3. Left os innominatum, external surface, etc.

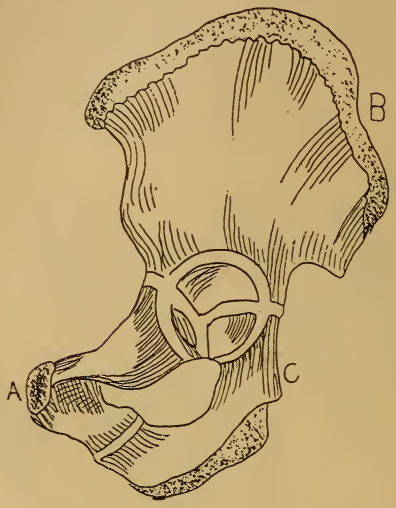


Fig. 3—Left os innominatum, partly ossified. The haunch bone as it exists in the child. A, pubis; B, ilium; C, ischium.

Fig. 4. Right os innominatum, internal surface.

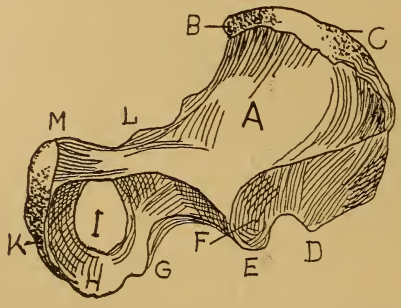


Fig. 4—Right os innominatum, internal surface. A, internal iliac fossa; B, anterior superior spinous process of the ilium; C, crest of the ilium; D, posterior superior spinous process of the ilium; E, posterior inferior spinous process of the ilium; F, articular surface; G, spine of the ischium; H, tuberosity of the ischium; I, obturator foramen; K, ischia pubic ramus; L, crest of the pubis; M, the pectineal eminence.

THE OS COCCYGIS.

The OS COCCYGIS (Fig. 5) is three or four little bones united together on the median line of the body, and attached to the os sacrum. Each little bone is tipped with cartilage, and they are so united as to be movable. The entire bones form a pyramid, the apex of which is below. The internal surface is smooth, like that of the sacrum, terminating the plane of the sacrum and bounding it anteriorly.

Fig. 5.

The os coccygis.

Fig. 6. Vertical section of the pelvis.

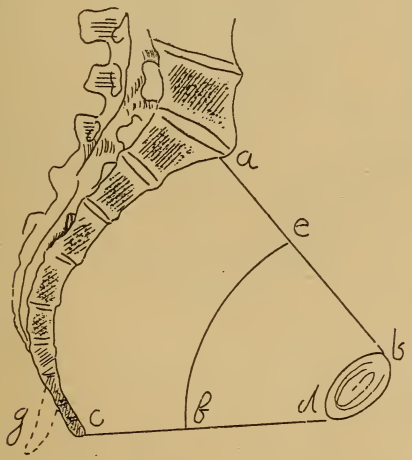


Fig. 6—Inlet, outlet, and axis of the pelvis. a, b, plan of inlet—superior strait; c, d, plan of outlet, or inferior strait; e, f, axis of cavity; g, the coccyx extended as it is in labor.

Of the JOINTS OF THE PELVIS it is only necessary here to say that there is no motion in them to facilitate labor, except that the sacro-coccygeal joint is of the kind called ginglymoid, admitting of extensive motion, especially back-

ward, so as to permit the enlargement of the lower outlet an inch or more. (Fig. 6.)

OF THE PELVIS IN GENERAL.

We will now consider the pelvis collectively or as a whole; its relation to the rest of the body; its magnitude, axis, etc. It is connected with the trunk by the articulation of the sacrum with the last lumber vertebra, effected in the same manner as the junction of the vertebra with each other; with the lower extremities it is connected by means of the hip joints. When the pelvis is *in situ*, the brim is neither horizontal nor perpendicular. It represents a cone, slightly flattened from before backwards, the base of which being above, while the apex is directed downwards.

When the body is erect the upper part of the sacrum and the acetabula are nearly on the same descending line, the point of the os coccygis being a little above the arch of the pubis, and the sacro-vertebral angle three inches and nine lines higher than the pubis. Were it not for the obliquity owing to the upright position of the human female, the womb would gravitate low in the pelvis, and produce most injurious pressure on the contained viscera. The lower or true pelvis is the part involved in parturition, and its size and shape demands our attention.

THE BRIM OF THE PELVIS.

This is defined by the LINEO ILIO PECTINEA, which marks the boundary of the true and false pelvis, and this *superior strait* is the entrance of the lesser pelvis. Its form has been variously described as being oval, heart-shaped, and triangular. If we call it "triangular with angles rounded off," the base of the triangle is behind and the apex in front. It would be nearly oval were not the

oval form broken by the promontory of the sacrum. This brim is the first solid resistance the head of the fœtus meets in its descent through the pelvis.

DIAMETER OF THE PELVIS.

Different estimates are made by different anatomists of the measurements of the brim of the pelvis. The following is nearly the correct size of the ordinary female pelvis :

Fig. 7. The bony pelvis.

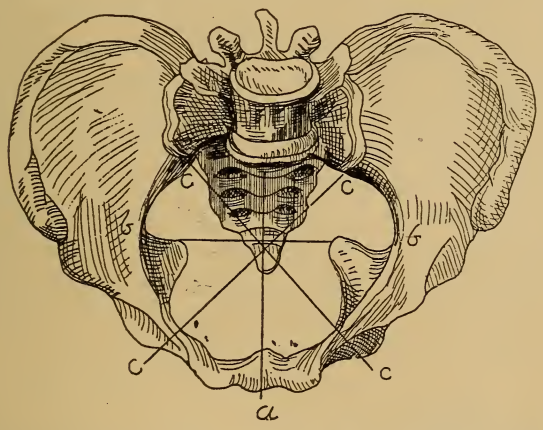


Fig. 7—The pelvis seen from above. a a, The antero-posterior or sacro-pubic diameter ; b b, the transverse diameter ; c c, the two oblique diameters.

The circumference varies from thirteen to fifteen inches ; the antero-posterior diameter, *i. e.*, from the prominence of the sacrum to the upper edge of the symphasis pubis, (Fig. 6), is about four and a quarter inches ; the transverse across the widest part of the brim, at right angles to the antero-posterior, is five and a quarter inches, and the oblique from the sacro-iliac synchondrosis of one side to the opposite of the brim, just above the aectabulum, is five inches. (Fig. 7).

THE CAVITY OF THE PELVIS, of which the fixed boundaries are the sacrum and the pubis, is of unequal depth. The height in front is one and a half inches; upon the sides, three and three-quarter inches, and it is four and a quarter inches if a straight line be drawn from the sacro-vertebral angle to the point of the coccyx, five and a quarter inches following the curve of the sacrum, and six inches if the coccyx be extended. (Fig. 6).

The antero-posterior diameter of the outlet from the arch of the pubis to the point of the coccyx is usually four and a quarter inches, but may increase to five inches during labor by the retrocession of the coccyx (Fig. 8); the transverse from one tuber ischii to another is four and a quarter inches, and the oblique about four and three-quarter inches.

It is important to notice that the diameters are entirely changed between the rim and the outlet, and that the

Fig. 8—Position of the pelvis and the axis at the termination of labor.

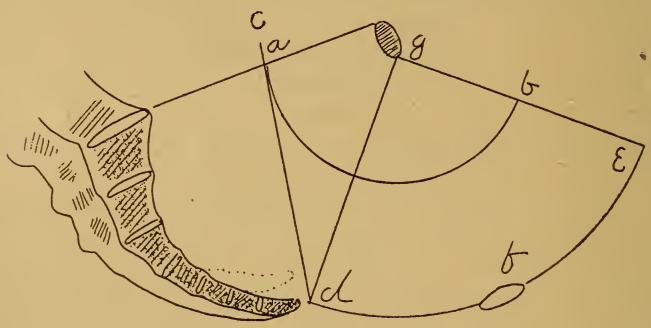


Fig. 8—a b, Total axis of the excavation; c, the axis of the superior strait; d e, perineum as distended at the moment of the passage of the head.

change is effected gradually. The axes of the inlet and outlet form an obtuse angle with each other (this is illustrated in Figs. 6 and 8.) The three diameters taken at

the center of the pelvis are very nearly equal—about four and three-quarter inches.

DIFFERENCES OF THE PELVES.

There is considerable difference between the male and female pelvis, in shape and size. The pelvis in the male is smaller but deeper; the bones are thicker and the brim is more circular, the depth of the symphasis pubis is greater, the sacrum is more perpendicular, the arch of the pubis is narrower, the tuber ischii are nearer each other, and the coccyx less movable. In the female the iliac fossæ are larger, the interval separating the angle of the pubis from the acetabulum is greater, causing the prominence of the hips and wider separation of the thighs, the superior straight is larger and more elliptical, the curve of the sacrum deeper and more regular, the tuberosities of the ischii are further apart, and the arch of the pubis broader. From the greater width of the female pelvis, and from the upper end of the thigh bones being farther apart than in the male, the thigh bones approach each other in their descent, giving a peculiarity to the movements of the female in walking.

The soft parts lining the pelvis and covering it externally modify the diameters of the pelvis, but the effect of these additions in diminishing the internal diameter is not very great. The diameter of the cavity is lessened thereby from one-fourth to one-half an inch.

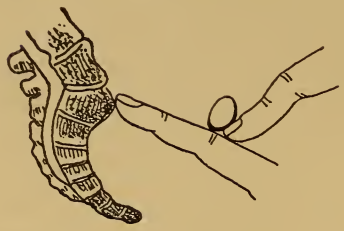
USES OF THE PELVIS.

One function of the pelvis is to inclose and protect the bladder, rectum and seminal vesicles of the male, the uterus, Fallopian tubes and ovaries, as well as the bladder and rectum in the female. During labor it affords a passage for the child.

TERMINAL OUTLET OF THE PELVIC CANAL.

This is not at the coccyx, but rather at the anterior commissure of the perineum. This is so greatly distended at the last moment of labor as to much prolong the posterior wall of the pelvic excavation and the canal to be traversed by the fœtus. (Fig. 8).

Fig. 9—Section of sacrum and pubis.



Measuring superior strait.

Fig. 10.

Measuring inferior strait.

CHAPTER II.

PARTS CONTAINED IN THE PELVIS.

The internal organs of generation are the vagina and uterus with its appendages; but I will first describe the urethra and the perineum.

The URETHRA is a membranous dilatable canal about an inch and a half in length, and directed obliquely from before backwards, and from below upwards, running under and behind the symphasis pubis, from which it is separated by loose celular tissue. Its inferior portion is intimately united to the vaginal walls. Its meatus, the outlet for the urine, is situated about an inch from the clitoris, and immediately above the prominent enlargement of the anterior part of the vagina.

Internally the urethra opens into the bladder. Its direction is subject to variation during pregnancy, the bladder being carried upwards with the uterus, the urethra curves under the pubic arch, and then ascends perpendicularly. The same change occurs when the uterus is enlarged from other causes. In prolapse of the pelvic viscera the course is reversed.

The PERINEUM is the portion between the rectum and the vagina.

THE UTERUS.

The uterus is the organ provided for the reception, growth, and ultimately for the expulsion of the fœtus. In the virgin normal state it is pear-shaped, flattened from before backwards ; is situated in the cavity of the pelvis, between the bladder and the rectum, and projects into the upper end of the vagina below. ts upper end or base is directed upwards and forwards, so that its axis corresponds very nearly with that of the superior strait, and forms an angle with the vagina.

The uterus measures about three inches in length, at its upper part two in breadth, an inch in thickness, and it weighs from one ounce to an ounce and a half. The *fundus* is the upper broad extremity of the organ ; it is convex, covered by peritoneum, and placed in a line below the level of the brim of the pelvis. The *body* gradually narrows from the fundus to the neck. Its anterior surface is flattened, covered by peritoneum in the upper three-fourths of its extent, and separated from the bladder by some convolutions of the small intestines ; the lower fourth is connected with the bladder. Its posterior surface is convex, covered by peritoneum throughout, and separated from the rectum by some convolutions of the intestines. The lateral margins are concave, and give at-

tachment to the Fallopian tubes above or superiorly, and the round ligaments below ; and behind these, and also below the ligament of the ovary. The *cervix* is the lower and constricted portion of the uterus ; around its circumference is attached the upper end of the vagina, and this extends upwards a greater distance behind than in front. At the vaginal extremity of the uterus is a transverse aperture, the OS UTERI, bounded by two lips, an anterior one which is thick, and a posterior one, narrow and long. The os uteri, or os tincæ, is generally about the size of a

Fig. 11 Uterus, bladder, etc., showing relative position.

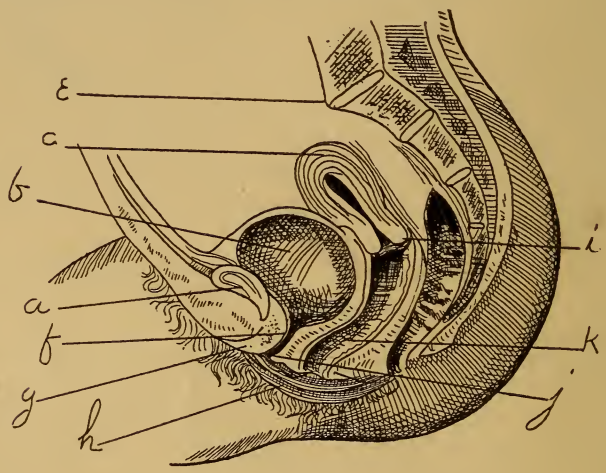


Fig. 11—Section of pelvis. a, section of pubis ; b, bladder distended ; c, the uterus in normal position ; e, sacrum ; f, urethra ; g, vagina ; h, hymen ; i, the os uteri ; j, meatus of urethra ; k, vagina.

small goose-quill. The *canal of the cervix* is from half to three-quarters of an inch long ; leading from the os uteri it first widens and then contracts again where it enters the body of the uterus. The surface of the canal exhibits a

variable number of follicles or vesicles called the *glandula nabothi*, which secrete a thick mucus ; this blocks the canal after impregnation. The cavity of the body and neck has a longitudinal extent of about two and a half inches ; in virgins it is much less. (Fig. 12).

STRUCTURE OF THE UTERUS.

The proper tissue of the womb is composed of fibres, and is proved to be muscular. In the unimpregnated state it is dense, firm, and of a grayish color. The neck appears less firm than the body.

The *internal or mucous membrane* is thin, smooth, and closely adherent to the subjacent tissue. It is a quarter of an inch thick at the middle of the body of the uterus ; in the neck it does not exceed one-twenty-fourth part of an inch in thickness. It is continuous through the fimbriated extremity of the Fallopian tubes with the peritoneum, and through the os uteri with the mucous membrane of the vagina.

THE FALLOPIAN TUBES.

The uterine or Fallopian tubes are two canals, about four inches long, placed in the superior border of the broad ligaments of the uterus. They extend for about three inches and a half, when they expand and terminate with a fringed process called the fimbria, which is applied to the ovary after impregnation. The Fallopian tubes serve the double purpose of a canal for transmitting the fecundating principle of the male and for carrying the germ furnished by the female to the uterus—in fact they are excretory ducts of the ovary.

Injections into the uterus may pass into the peritoneal cavity, through the Fallopian tubes, and cause peritonitis.

At each menstrual period an ovula passes along with the serum current in the Fallopian tubes to the uterus.

THE OVARIES.

The ovaries in the female are said to be the analogues of the testicles in the male ; they both secrete a fluid that is essential to impregnation. They are situated on either side of the uterus, and are attached to either side of it by the posterior duplicature of the broad ligament called the ligament of the ovary. (Fig. 12).

They are oval flattened bodies about an inch and a half long, three-quarters of an inch wide at their greatest breadth, and a quarter of a inch thick. They are situated on the sides of the uterus in that portion of the broad ligament called the posterior wing, just behind the Fallopian tubes. The ovary consists of a peculiar structure enclosed by two envelopes, one of which is serous and the other fibrous. Within the fibrous coat is a special tissue called the stroma ; imbedded in this are numerous small round transparent vesicles in various stages of development, varying in size from that of a millet seed to that of a hemp seed. They are the ovisacs, containing the ova, and are called the Graafian vesicles. These have thin transparent walls and contain a clear fluid, and within that the ovula. Fifteen or twenty may readily be distinguished in the adult female without the aid of magnifying glasses.

THE VAGINA.

The vagina is a membranous canal, extending from the vulva to the uterus obliquely through the pelvic cavity, between the bladder and rectum, having about the same direction as the axis of the pelvis. It is described as being five or six inches in length and about two inches in diameter, but it would be more correct to say that it is capable of being distended to these or greater dimensions, for in its common state the os uteri is seldom found to be

more than three inches from the external orifice, and the vagina is contracted as well as shortened. In great part the walls of the vagina are composed of spongy erectile tissue, and their vascularity is a cause of considerable hemorrhage consequent on their rupture. Three layers combine to form the walls; one external or celulo-fibrous, a middle or muscular one, and the internal or mucous one. The latter is of a pale red hue, which becomes violet during menstruation and especially during pregnancy. The mucous coat is disposed in the form of rugæ or folds anteriorly and posteriorly, which are better developed in young virgins and aged females; during advanced preg-

Fig. 12—Section of the Uterus, &c.

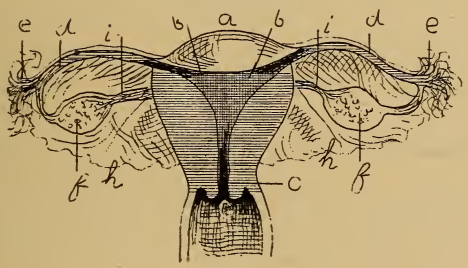


Fig. 12—Uterus, ovaries and Fallopian tubes. Section of the uterus, etc. a, Fundus of the uterus; b, cavity of the womb; c, cavity of the neck of the uterus; d, d, the cavity of the Fallopian tubes; e, fimbriated extremity; f, f, the ovaries; g, the vagina; h, h, the round ligaments; i, i, the ligaments of the ovaries.

nancy, and for a short time after delivery, they are entirely effaced.

The upper part of the vagina is connected to the circumference of the os uteri but not in a straight line, for the former stretches beyond the latter, and being joined to the cervix, its mucous membrane is reflected over the os uteri, which by this mode of union is suspended with

protuberant lips in the vagina, and permitted to change its position in various ways and directions.

THE EXTERNAL ORGANS.

The situation of the external organs of generation are indicated in the accompanying diagram (Fig. 11.) It is not deemed necessary here to describe these, but in regard to the hymen (the membrane that in infancy nearly closes the orifice of the vagina), we may remark that it is not a perfect test of virginity. There are, however, examples recorded in works on midwifery where a slight surgical operation was necessary after marriage, because this membrane was uncommonly strong.

CHAPTER III.

PHYSIOLOGY OF THE UTERUS AND OVARIES.

Menstruation is a periodical flow of blood having its source in the walls of the uterus. But menstruation is excited by and dependent upon ovolution, and the effective cöoperation of both the uterus and ovaries is necessary to both menstruation and conception. We shall consider these functions separately.

MENSTRUATION.

In healthy women at the period of puberty, a certain amount of sanguineous fluid is secreted by the lining membrane of the uterus, and is excreted through the vagina every month; this is termed the catamenia, or menses, and the function itself menstruation. A female in whom the discharge recurs at the usual periods, in the usual quantity, and of the usual quality, is said to be regular,

The occurrence of menstruation defines the period of puberty at which a girl becomes a woman capable of conception, and its cessation terminates the prolific period of female life.

Dr. Robinson, of Manchester, England, in a paper on the natural history of menstruation, has stated the age at which it occurred in 450 cases.

According to his table, 10 menstruated for the first time at 11 years of age, 19 at 12, 53 at 13, 85 at 14, 97 at 15, 76 at 16, 57 at 17, 26 at 18, 23 at 19, and 4 at 20.

The time at which the first menstruation occurs varies exceedingly from the influence of climate, habits of life and constitution. There have been occasional instances of very precocious menstruation, in which the first appearance of the discharge was attended with all the attributes of puberty. I myself knew one case where a girl of nine years, not only menstruated, but presented the external signs of puberty, such as prominent breasts, wide pelvis, rounded contour of body, &c.

The first appearance of the menses very rarely occurs without being preceded by premonitory symptoms. There is usually a degree of languor and lassitude, fatigue after exertion, inequality of spirits, dark shade under the eyes, headache, sometimes pain in the thyroid gland, pain in the back, a sensation of tension and swelling in the lower part of the abdomen, and occasionally considerably fever. Not unfrequently strange nervous disturbances occur; but all of these symptoms may pass off, the first and second time, without the appearance of the menses, or with a white discharge only. Usually the phenomena may last from one to eight days, then there is an abundant flow of mucus, which after one or two days is mixed with blood,

and soon gives place to almost pure blood. When this discharge takes place most of the unpleasant symptoms disappear, and the female only complains of weakness and is somewhat pale. The hemorrhage continues for several days, then the amount of blood mingled with the vaginal mucosities diminishes, soon there is mucus alone, then the discharge ceases.

I should remark now that the propriety of applying the terms, blood or hemorrhage, to the menstrual secretion is properly questioned.

Sometimes the first menstruation takes place without being preceded by any discomfort, but pretty generally there is a change in the girl at the time, both in her body and mind, a change that fits her for the important duties that devolve upon her.

Most young girls have a return of the discharge after a month, the menses afterwards recurring regularly; some do not become regular until after several months. Sometimes the function is imperfectly performed; such cases are accompanied with considerable distress.

In some young girls the precursory symptoms of the first appearance of the menses may not be followed by a flow of blood, and there is an apparent effort of nature recurring monthly for several months before the courses become established.

There are occasional examples of retarded menstruation. I am acquainted with one woman who at the age of twenty-five years has not menstruated. The absence of the menses does not render conception impossible, in every case.

After the menses are established, until the time of their cessation, they generally return every month, unless interrupted by pregnancy or nursing. The average of the

catamenial period is about twenty-eight days; in a large number it is thirty days; in some instances they recur every fifteen days.

The duration of the flow varies from one to eight days; three or four days is the most usual duration. The quantity of blood lost is variable; from three to five ounces is said to be the average.

When the ovaries are congenitally absent, or have been removed, or have become disorganized, menstruation is absent, or ceases. The cause of the menses is the successive evolution of the Graafian vesicles; but the regular process may go on in the ovary without the regular sanguineous discharge.

The menses continue in the majority of cases until about the age of 46 years, or perhaps in this country 48 years.

According to Dr. Robertson, of England, the periods at which it closed in 77 individuals was, in 1 at the age of 35 years, 4 at 40, 1 at 42, 1 at 43, 3 at 44, 4 at 45, 3 at 47, 10 at 48, 7 at 49, 26 at 50, 2 at 51, 2 at 52, 2 at 53, 2 at 54, 1 at 57, 2 at 60, and 1 at 70.

The average duration of the menstrual function is about 30 years. The cessation of the ovarian function is generally announced several years in advance by irregularities of the menses. Besides the intermissions and irregularities, there are other symptoms; a general and indefinite feeling of uneasiness, pelvic pains, itching at the genital parts, flashes of heat in the face, alterations of chilliness and perspiration, leucorrhœa, etc. These troubles are usually slight, and disappear promptly. The time of life has been called the CRITICAL PERIOD, because there has been an opinion prevalent that peculiar dangers attend it. However, the mortality is not greater between the ages of

45 and 50 years than at any other period of life. Yet it is true that in some instances diseases that had been latent previously, declare themselves at this period.

THE FUNCTION OF THE OVARIES.

We will now consider the physiological action of the ovaries and its intimate connection with the action of the uterus in menstruation, etc.

Preceding the first menstruation an ovary is considerably enlarged, becomes of a red color, and its vascular apparatus is considerably congested; the Fallopian tube also becomes congested; its fimbriated extremity is of a violet red color, and has a velvety appearance. The Graafian vesicles increase in size; fifteen or twenty of them, more advanced than the others, project from the surface of the ovary; one of these grows so that after a few days it forms a tumor of the size of a cherry; the walls of the vesicle, being distended by an increased secretion of fluid, becomes quite thin, and at last are ruptured. When the thinned walls give way, the ovule is expelled, with a part of the granular contents of the vesicle; these are grasped by the fimbriated extremity of the Fallopian tube which is prepared to receive it and convey it through its canal into the cavity of the uterus.

This evolution of an ovule excites numerous sympathies throughout the organism of the female, and especially the generative organs. The vascular apparatus of the womb becomes developed in an unusual manner; a network of fine blood vessels surround the orifices of the numerous glandular tubes, of which the membrane is almost entirely composed; this gives a violet hue to the internal surface of the womb; the utricular glands increase in size, the muscular structure of the uterus acquires greater exten-

sion, becomes redder and more spongy and supple, the volume of the organ is increased, the neck is tumefied and its orifice narrower, the lips of the os tincæ are warmer and their color deeper.

The vascular congestion which the uterus undergoes is accompanied with the exudation of sanguineous fluid, which is at first but a few drops; this communicates to the increased vaginal mucus a reddish hue. After a day or two there is a bloody flow from the vascular network of the mucous membrane. This flow, which constitutes the menses, is diminished after three or four days, and the discharge again contains a large proportion of mucus and serum. It is probable that the rupture of a Graafian vesicle occurs during the last days of the flow, ordinarily, and it is also believed that venereal excitement is capable of exerting so much influence upon it that it may determine the rupture of an enlarged vesicle, which, without sexual intercourse, would have remained whole several days longer.

After the discharge of the ovule consequent on the rupture of the Graafian vesicle, the walls of the vesicle contract on the matter that is effused within it, and form a compact mass, which after a time has an orange yellow color—this is called the *corpus luteum*.

Ordinarily, in the human female in the normal condition, a new Graafian vesicle increases in size every month, becomes excessively developed, and finally bursts and discharges its ovule, to become, through successive transformations, the *corpus luteum*. What is called the "monthly sickness," "monthlies," "courses," etc., never occurs without having been preceded and accompanied by the development of a Graafian vesicle.

CHAPTER IV.

OF DISPLACEMENTS OF THE UTERUS.

In order to compress as much as possible what I say upon these topics, I shall consider here displacements of the uterus, both of those which occur in the pregnant and non-pregnant women.

By the inflection of the peritoneum the uterus is permitted to expand freely during pregnancy, and to rise without inconvenience into the cavity of the abdomen; this it could not do if it was confined to its place by short ligaments, or by adhesions. But from the same cause, women become liable to various diseases; to the retroversion of the uterus, and other displacements; to dropsy of the peritoneum, and to that species of hernia which is occasioned by the descent of the intestines between the vagina and rectum.

By PROLAPSIS is meant that condition in which the uterus falls below its natural level in the pelvic cavity. PROCIDENTIA is a term used to signify the protrusion of the uterus beyond the vulva. Women are liable, even when young, to a falling of the womb, but it occurs most commonly after the age of thirty-five, in such as lead a laborious life. Amongst other causes may be enumerated violent bearing down efforts, such as are made in straining to pass hardened feces, or in urging an evacuation through a stricture in the rectum, in coughing, lifting heavy weights, etc.

The immediate causes of the displacements are the pressure on the uterus by the viscera above it, and a diminution in tone of the uterine supports.

Displacements of the womb are more common among women who have hollow and capacious pelves ; in sufferers from dropsy, and in delicate, flabby subjects, where the broad and round ligaments are affected and elongated.

There may be prolapsis during the early months of pregnancy, and in cases where the pelvis is large and the ligaments are relaxed, the womb may rest on the perineum ; or the neck, and even the body may become visible externally ; but it subsequently rises out of the pelvic cavity, assuming a normal position.

When a woman has prolapsis uteri she often complains of a sense of weight about the pelvis, of dragging pains, of a wearisome backache, and of a leucorrhocal discharge. Menstruation is seldom interfered with, and as the uterus goes back of itself, or is easily pushed up when the patient is in bed, conception may take place, and the general health may not be directly affected.

In some few instances there is complete inability to pass water until the patient lies down and replaces the uterus with her finger ; in other cases micturition may be annoyingly frequent. Constipation is often complained of, and, if the woman be careless, a large accumulation of feces may take place in the rectum.

By a vaginal examination the os uteri is found low down, and if the cervix is of the natural length, we know that it is prolapsis.

If a round tumor is seen projecting beyond the vulva, and if at the lowest part of it there is what seems to be the mouth of the uterine cavity, it may be advisable to introduce a sound or catheter, to make sure that the opening

is not a mere cleft in a uterine polypus. (Of course, you would not use a sound if you suspected pregnancy.) If there are ulcers, cracks, etc., they may be detected, the ulcers looking as if portions of the mucous lining had been punched out.

In pregnancy, displacements may occur either slowly or suddenly, though the woman may have had nothing of the kind previously, or they may be the continuation of a previous prolapse. The progressive development of the uterus generally removes the prolapsis about the fourth or fifth month, but if the pelvis is very large, it may possibly continue.

As in other cases of prolapsis, the pregnant woman may suffer very much from it. She may suffer from a feeling of weight at the anus ; painful tractions in the groins, lumber regions and umbilicus ; a fetid discharge may come on ; there may be complete retention of urine, very obstinate constipation, etc.; and the pressure on the uterus may cause abortion.

For complete retention of the urine the catheter may be used, or the womb may be pressed up by one or two fingers introduced into the vagina ; or the woman may be able to urinate if she lies down and elevates her hips considerably.

THE OPERATION OF INTRODUCING THE CATHETER may be performed by the educated nurse. The patient being placed upon her back and the labia separated, the point of the forefinger of the left hand should be placed just within the orifice of the vagina so as to press slightly the upper edge ; the catheter should then be passed along the inner surface of the finger until it is arrested by the anterior part of the vagina ; when there, a very slight movement so as to elevate the point of the instrument a little,

enables the operator in the majority of cases to enter the catheter into the canal. The operation is more difficult when the parts are swollen or distended, as happens occasionally from disease, during pregnancy or labor, or after delivery. If we cannot detect the orifice by the touch, we may use a light, and the patient may be placed on her side. We may adopt another way to proceed. The point of the forefinger finds the clitoris, and passes from above downwards to the middle of the vestibule ; the first inequality met with is the orifice of the urethra, into which the instrument can then be passed. It will easily slide in if the instrument is not passed either to the right or the left of the median line.

When a woman who has previously suffered from prolapsis becomes pregnant, it is sometimes necessary for her to keep the horizontal position during the first three or four months of pregnancy, and after her confinement she should keep her bed a considerable time—perhaps for two months.

For the treatment of prolapsis in non-pregnant women, the general principles are to be applied : To afford artificial support to the superincumbent abdominal viscera ; give tone to the broad and round ligaments of the uterus, to the vaginal walls and the perineum ; and to remove any complications that induce the falling, such as uterine congestion, hypertrophy, cough, constipation, etc.

The uterus may usually be easily pushed back to its place when the patient is lying down, or, what is better, her head much lower than her pelvis. (Fig. 13). The knee-chest position is the best one.

Without going into the details of treatment in the use of bandages, tents, etc., I may say that a nurse may, in the absence of a physician, use astringent vaginal injections,

astringent pessaries (F. 154, 163), and cold soft water; hip baths may also be used. The nurse should know how to tamponade the vagina, because, when this is deemed advisable by the physician, he desires that the process be repeated every day, and in many instances it is not convenient or possible for him to make daily visits. The vaginal tampon is used as a means of retaining the uterus in its normal position, and also to hold medicinal agents applied to the cervix and vagina; besides, in some cases, direct pressure on the pelvic vessels stimulates and thus benefits them when in a state of chronic, passive dilatation, or venous hyperemia. Tampons are also used in cases of hemorrhage from the uterus, and as an absorbent of vaginal or uterine discharges, and for various other purposes.

The nurse may receive instruction from the physician in each case in regard to the material, etc., to be used as tampon. When it is desired to simply support the uterus in its place, fine cotton batting may be used, and this perhaps is, in ordinary cases, as good as any material. But in some cases absorbent cotton, oakum, marine lint, or wool may be preferred. The size of the tampon will, of course, vary; ordinarily one as large as a hen's egg may be introduced without difficulty; sometimes one nearly as large as a goose egg may be necessary, because a small one would not be retained. Cotton may be rolled tightly into the form of a cylinder, or a small bag may be made of muslin or linen, and cotton or other substance can be enclosed in this and applied.

The knee-pectoral position (Fig. 13) is the one in which a prolapsed uterus can best be replaced, and the nurse can best tamponade the vagina while the patient is in that

position. The *proper* knee-pectoral or knee-chest position is shown in Fig. 13.

The physician would, with or without the aid of the nurse, use a Sims' speculum, and first pack four small pledgets of cotton around the neck of the uterus. One string can be tied in the kite-tail manner around each of these pledgets, and there should be an end about ten inches long to be left out from the vagina, so that the

Fig. 13. Genu-pectoral position.

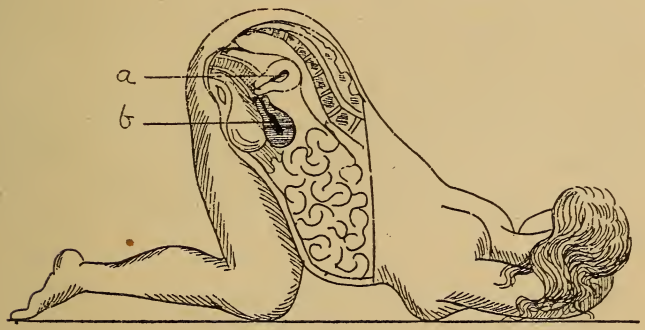


Fig. 13—Knee-chest or genu-pectoral position.
a, Retro-version of the uterus.
b, Natural position of the uterus.

whole may be easily removed. The nurse, if alone, however, will usually press in but one tampon, and she may do this while the patient is in the knee-chest position, or, what is nearly as well, on her side or back, having first, by a digital examination, ascertained that the uterus is in its proper position.

Either the nurse or the patient herself may easily press a tampon into its proper position, if she possesses an ordinary amount of boldness and dexterity. She will find it more difficult to properly place it, however, if there is tan-

nin or other astringent substance on the outside of it. This has an astringent effect immediately when it comes in contact with the vagina, and an unusual amount of vaseline is necessary to cover it.

If a solution of tannin, alum, acetate of lead, sulphate of zinc, or carbolic acid be used, it is best to prepare several tampons at the same time ; soak all the tampons in the solution, squeeze them out and dry them, then when one is used put it inside a bag and apply it dry.

The patient herself, if she is intelligent, and is not too timid, can introduce the tampon. She should first smear its surface with vaseline, lard, or olive oil. Then lying on her back with thighs separated and flexed, draw the labia apart with the fingers of one hand and steadily crowd the tampon into the vagina with the other, always taking care to have a good, strong cord, one end attached to the tampon and the other hanging down to facilitate removal.

It is well also, sometimes, to place another pledget of cotton between the labia, that can be removed when the woman urinates. When all is well crowded into place, the tampon should be retained by a broad T bandage, covered by oiled silk when it rests against the vulva.

Generally the whole should be removed within from eighteen to twenty-four hours, and hot water or some cleansing injection used, and the tampon be soon reapplied.

If opium or morphine is used with the tampon, as it is sometimes when there is considerable pain, first dip the cotton in glycerine, and then sprinkle the narcotic on the outside.

If borax, tannin, alum, acetate of lead, sulphate of zinc, chlorate of potash, or carbolic acid is used, I think it well to envelop the undissolved drug in cotton, put it in the

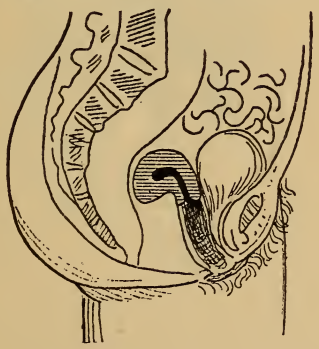
middle of the tampon, and let it dissolve slowly in the vagina. It is best when thus applied to let the whole suppository remain as much as forty-eight hours ; it should, however, be removed when it seems to cause smarting or excoriations.

The accompanying cut (Fig. 13) is inserted to show what is the knee-chest or genu-pectoral position, as well as to exhibit the retroversion of the uterus. Note that in this position the hips are elevated, and remember that it does not suffice to get on the hands and knees if the haunches are low down on the legs and ankles.

RETROFLEXION AND ANTIFLEXION.

The condition known as *retroflexion* consists of a bending back of the uterus at a point where the neck joins the body, so that the fundus is found between the cervix and rectum, the os uteri being in the natural position.

Fig. 14. Retroflexion of the uterus.

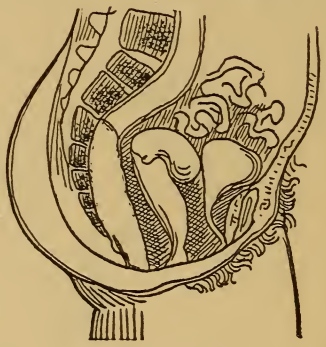


In *antiflexion* we find the fundus pressing upon the bladder. These displacements are rare in virgins. The false membrane formed in peritonitis is now and then the cause of these deviations, when there is superadded such

causes as are mentioned for prolapsis. The symptoms of RETROFLEXION are usually a dull, weary and constant backache, which is more marked about the sacral region, pains that shoot down the thighs or the groins, and a frequent desire to go to stool, although nothing comes away. The passage of a motion that is not at all constipated aggravates the pain and aching; sexual intercourse is attended with suffering, and is not followed by pregnancy; and just before and after the monthly periods there is so much tenderness that sexual connection cannot be tolerated.

The catamenia come on with pain and difficulty, but about the second day the flow of blood seems to give some relief. The general health is bad, there are frequent attacks of nausea, the appetite is small, the spirits are de-

Fig. 15. Anteflexion of the uterus.

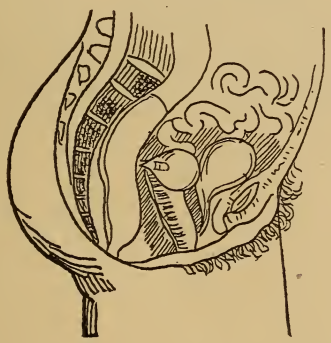


pressed, and there are many what are called hysterical symptoms. On examination the congested fundus may be found encroaching upon the rectum; on touching this part the patient will exclaim that it is the seat of her sufferings, and it is not uncommon to find tenderness of one or both ovaries.

Not many of these symptoms are present in ANTIFLEXION, but this commonly produces great irritability of the bladder, so that when the patient is in the erect position, the desire to micturate is almost as great as in disease of the bladder.

The treatment includes replacing the uterus with the sound. Should there be adhesions, however, this might cause intolerable pain. In such cases relief is given by the use of belladonna plasters and belladonna, opium, hyoscyamus, or conium tampons. One-half to one dram of the tincture of one of the narcotics may be added to

Fig. 16. Anteversion of the uterus.



the glycerine in which the tampon is soaked, or the cervical end of the tampon may be dipped in the tincture. Suppositaries and ointments may also be used. (F. 153, 199).

RETROVERSION AND ANTEVERSION.

In RETROVERSION (Fig. 13) the fundus is turned toward the hollow of the sacrum, while the os is drawn under the arch of the pubis.

ANTEVERSION is characterized by the fundus being to-

wards or against the bladder, the os being directed to the cavity of the sacrum. (Fig. 16.) Retroversion is liable to occur at the third month of pregnancy, from the neglected distention of the bladder, and from a morbid weight and enlargement, though after the fourth month the uterus is too much enlarged to fall down in any way. The chief symptoms are backache and bearing down pains. It may happen that micturation will be impeded; and if the bladder may be felt at the lower part of the abdomen, or if the patient complain of a constant desire to pass water, or especially if the urine should dribble away, the catheter ought to be passed without loss of time, and the bladder should be kept evacuated. It may be necessary, in order to restore the organ to its proper position, to introduce the first and second fingers of one hand into the vagina, and a finger of the other into the rectum.

CHAPTER V.

Mismenstruation.

AMENORRHŒA.

The first variety of cases of amenorrhœa are those where no menstrual fluid has ever been secreted. All girls, as we have seen, do not menstruate at fifteen years, as all children do not cut their first teeth at seven months, and in either case there may be no disease. But when a female has reached adult life, when her frame has assumed the character of womanhood, when she is not chlorotic, and when all her organs (save the sexual) perform their functions naturally, then a cause of the absence of the flux should be looked for. Menstruation may be absent from congenital malformation. The ovaries may be wanting, or if present may be atrophied or diseased; perhaps they present scarcely a trace of a Graafian vesicle; or these glands can exist and the uterus be absent or imperfect; or there may not be found a trace of a vagina. In the second variety of amenorrhœa there has been a secretion of the menses but no evacuation of them. This may be because there is an occlusion of the vagina, or the os uteri may be imperforate. When the os is closed by a membrane, the structure may be incised with the bistoury, or perhaps be ruptured by the uterine sound.

The third variety is the most common form of amenorrhœa, viz: that in which the flux having been properly

established and appearing regularly for a time, has been prematurely arrested. But it may be said of amenorrhœa in its various forms, that it is not so much a disease as a symptom of disease ; a consequence of either individual organization, disorder of the uterus or ovaries, or of some other organ or organs sufficiently important to affect the constitution.

Hence all the means that restore the system to health, medicinal and hygienic, may be recommended as tending to cure the complaint, and hence we have to inquire whether there is serious disease in any of the organs when the question of pregnancy arises, on account of the disappearance of the menses.

It is always necessary in treating amenorrhœa to consider the cause of it, and we should know that it may come from torpitude of the secernent vessels of the uterus, produced by anxiety of mind, cold, or suddenly suppressed perspiration ; falls, especially when accompanied with terror ; or a general inertness and flaccidity of the system, and more particularly of the ovaries. (F. 201, 202).

DYSMENORRHŒA.

There are few women who pass through the whole period of sexual vigor without having more or less frequently to endure an attack of dysmenorrhœa. Some few females experience great pain with each flow, from puberty to the change of life, while in others pain is only an exceptional accompaniment. With some women marriage effects a cure, while in others it either aggravates or originates dysmenorrhœa. Three distinct varieties of dysmenorrhœa have to be considered : the neuralgic, the congestive, and the mechanical.

The variety which is called NEURALGIC DYSMENORRHŒA

is more frequent in unmarried females; and if married, in those that have not borne children; and most frequently affects those of a nervous temperament, and of a thin, delicate habit. The paroxysms present all the characteristics of neuralgia. For a time before the catamenia appear there is a sense of general uneasiness, a deep-seated feeling of cold and headache, sometimes alternating with pain in the back and lower part of the abdomen, perhaps extending down the thighs.

The flux comes on sometimes slowly and scantily, or in some cases in slight gushes. The discharge may be paler than natural, and may be mixed with slight clots. In some cases there is a membrane of plastic lymph discharged either in shreds, or in the form of the uterine cavity that it has lined. Conception is rare under such circumstances.

Though the disease seems to be of a simple neuralgic character, it is supposed that there is a degree of inflammation of a peculiar kind in the mucous membrane where the plastic lymph is thrown off.

In regard to the duration of the period, the constitutional injury sustained, and as to the relief on the appearance of the menses, the cases vary.

A peculiar irritability of the uterus is a common cause of this form of the disease, but, like amenorrhœa, it may be caused by cold, mental emotion, or local injury from a fall.

In the treatment of this class of cases, to reduce the pain, opium, conium, hyoscyamus, etc., are given, often combined with camphor. (F. 161, 163, 166, 167.) These should be given in the form of an enema, or a suppository, if the stomach is irritable. (F. 160.) The hot hip bath should be employed, the patient remaining in it from thir-

ty-five to forty minutes; an ounce of carbonate of soda may be added to the water. The good effects of the bath may be kept up by the use, immediately afterwards, of a pessary of oxide of zinc and belladonna. (F. 162.) It will be of benefit to take vaginal injections of tepid, or warm, or hot water on the approach of the menses, and the patient should use a pediluvium, or a hip bath, for two or three nights in succession antecedent to the show of the menses. During the interval every effort should be made to strengthen the patient, and to diminish the irritability. Injections of tepid or cold water may be taken daily; the diet should be nourishing, and plenty of exercise in the open air should be taken by the patient. Some preparation of iron should be given, and I have found F. 177 particularly useful.

CONGESTIVE DYSMENORRHŒA, sometimes described as *inflammatory* dysmenorrhœa, generally comes on at a later time of life than the neuralgic form. It occurs in females of a full habit and of a sanguine temperament; in the married as well as the unmarried, and those that have not borne children.

Restlessness and feverishness, rigors, flushing and headache generally precede the severer symptoms. The sufferings commence, or are generally aggravated four or five days before the period, and it may continue for a week or more. Both before and after the catamenia appear, there is great pain across the back, aching of the limbs, intolerance of light and sound, weariness, the face is flushed, the skin hot, the pulse full and bounding; when the flow gets abundant the pain is mitigated, though there are paroxysms of pain, as small clots and shreds of membrane are thrown off from the uterine cavity. Under the influence of inflammation, the epithilial coat of the uterine cavity

and of the vagina is sometimes expelled. In the interim between the periods the cervix uteri is congested and tender, and pain will be excited by pressing the ovaries ; usually there is a tenacious leucorrhæal discharge. Frequently the breasts swell and become tender as the period approaches.

In treating this form of dysmenorrhœa, opiates must be used, as in the former variety, to afford some alleviation. Give also saline purgatives, febrifuge medicines, such as aconite, veratrium, and gelsemium ; also cooling drinks. During the interval the patient should live plainly, avoid stimulants, and take moderate outdoor exercise. The suppositories (F. 163) may be used steadily. If the disease be associated with a rheumatic diathesis, the appropriate remedy for that should be used. It is in such cases especially that chalybeate mineral water, warm sea water, baths, colchicum, iodide of potassium, with friction and electricity applied directly to the hypogastric region, succeed in restoring health. (F. 103, 165).

MECHANICAL DYSMENORRHŒA is that form in which there is some mechanical obstruction to the escape of the menstrual discharge. The causes of the obstruction are various. There may be either a stricture of the internal orifice of the uterus, or a narrowing of the whole canal of the cervix, or the external os uteri may be small and contracted, or some tumor may interfere with the patency of the cervical canal, and there may be retroflexion or antiflexion of the uterus.

In these cases there is more or less violent expulsive pain coming on in paroxysms, and there is usually a scanty flow. Often the discharge escapes in gushes, each gush being preceded by a bearing down effort, and accompanied by an expulsive pain. There are attacks of nausea,

restlessness and retching, with flatulence ; there is always severe headache and congestion, with tenderness of the ovaries ; and if there is endometritis, there are some other inflammatory symptoms.

Modern gynecology has various remedies for this class of cases, of which it is not necessary to speak here.

MENORRHAGIA.

The term menorrhagia should be applied only to cases of menstrual flow, although it is often employed to signify any considerable sanguineous discharge from the uterus, other than normal monthly escape. But I will say something here of cases where there is a more abundant or a more prolonged flow than is natural to the subject of it, and of cases where there is a recurrence of the discharge at short intervals, so as to seem almost continuous.

In that variety in which the discharge is normal in quality but the quantity is increased, there is undue uterine congestion, set up by constitutional causes, or it is induced by slight disease of the uterus or ovaries.

When menorrhagia takes place in plethoric habits, it is manifestly remedial, and ought not to be restrained hastily. We may endeavor to reduce the plethora, and a cooling diet, the recumbent position, and saline cathartics may be enjoined. (F. 61).

If the flow continues five days or more, and especially if depressing effects are manifested, such as general weakness, languor, mental depression, with pain in the head, loins or back, the patient is undoubtedly suffering from the loss of blood, and it is best to restrain the flux by general and local means (F. 176.) At the time when the flow is profuse or long continued, give strong cinnamon tea, a teacupful at a time, or teaspoonful doses of tincture cin-

namon every hour. Astringent pessaries should sometimes be used. Formerly injections of cold water were given ; recently injections of hot water, as hot as can be borne in the vagina, are considered more effectual. Fluid extract of ergot, in half-teaspoonful doses, may be given every hour for two or three successive hours. Other remedies are elixir vitriol and turpentine, opium and acetate of lead during the attack ; and counter irritation to the sacrum, the douche to the loins, sponging, cold vaginal injections, and the sitz bath during the interval. (F. 175).

If astringent or cold injections are used, the patient should lie upon her back in bed, and the fluid should be thrown up gradually. Of course, there are cases where only an experienced, well-educated physician can do all that is required in removing the cause of the difficulty.

CHAPTER VI.

GENERATION.

GENERATION is effected in the human species through the medium of the two sexes ; to effect it there must be the actual contact of the male semen, or its spermatozoa, with a healthy Graafian vesicle.

In CONCEPTION the SPERMATIC FLUID is furnished by the male. When this is examined under the microscope it exhibits a great number of little bodies, which are moving ; these are termed spermatic animalcules, or spermatozoa. These are met with in all animals capable of reproduction, and they do not appear in the human species before puberty.

The ovule furnished by the female is existent in the

ovary at the marriageable period. Fecundation takes place in the ovary; probably, sometimes, also in the tube or uterus when the ovule is passing out after menstruation.

Ordinarily the fluid ejaculated by the male must reach the uterus, and in some way be conveyed to the ovaries through the Fallopian tubes to produce fecundation.

It is believed that, as the consequence of copulation, the semen is thrown on the neck of the uterus; that it is carried forward, first, by the movements proper to the uterus and tubes; second, by the movements proper to the spermatozoa till it reaches the ovum, generally in the ovary; that it enters the ovum, and that then fecundation takes place.

Upon being impregnated and the vesicle bursting, the ovum is grasped by the free extremity of the Fallopian tubes, which is in contact with the ovary, the ovum passes from the ovary to the canal, is pressed onwards by the peristaltic motions of the tube through the duct, and finally reaches the uterine cavity; there it continues to grow during the ordinary term of gestation. After two hundred and seventy days the ovule has developed into a child, and is expelled through the natural parts of generation. When gestation proceeds in this manner, it is said to be normal, or good, or uterine; sometimes (though very seldom) the ovule is arrested at some point in its passage, and is developed outside of the womb; this is termed an *extra uterine pregnancy*.

The time at which conception is most likely to occur is that immediately following the flow of the menses; it may take place immediately before the flow, and sexual intercourse may be fruitful even when it takes place in the middle of the interval between the sexual periods, though the latter is unusual.

When conception takes place a few days or a few hours before the period, it is not followed by the menstrual flow.

UTERO-GESTATION.

At each menstrual period the bulk or size of the uterus is for the time increased, and if conception takes place about that time, the excitement maintains and soon increases the enlargement. The mucous membrane becomes almost doubled in thickness, and when the ovule arrives in the womb, it finds it filled with the membrane, the whole uterus is congested, its vessels enlarge, and are filled with blood, many which were invisible before are now filled with red blood, and the whole form an intricate net-work on the surface, and in the substance of the organ ; the coats of the arteries increase in thickness ; the coats of veins are thinner, and admit of still greater distention ; the nerves increase in size, and may be seen accompanying the blood-vessels, and there are changes not only in the volume, but in the shape, situation, direction, and relations of the uterus.

The organ increases slowly in size during the early months of pregnancy, and more rapidly in the later. The walls are distended, however, not mechanically from the development of the ovum, but simultaneously with it, and from a physiological cause ; in shape it becomes rounder, and towards the end of pregnancy it has an ovoid form. Simultaneously there is an alteration in its position ; at first the neck subsides towards the floor of the pelvis ; the presence of the rectum may incline the fundus to the right and the neck to the left ; about the fourth month the uterus rises above the superior strait ; at four months the fundus uteri is two or three fingers in breadth above the pubis ; at five months it is within one finger's breadth

of the umbilicus; between the fifth and sixth month it passes the umbilicus; at seven months it is three fingers' breadth above the naval; at eight months it is four or five above, but it does not rise higher during the last month. While it is rising it follows the direction of the axis of the superior strait; afterwards it inclines to the right oftener than to the left.

At term, the superior part of the uterus is in contact with the abdominal walls usually, but sometimes there may be some of the intestines interposed between them.

At full term the parietes of the womb are thicker than in the unimpregnated condition; at the point corresponding to the insertion of the placenta, thinner at the neck, and otherwise it retains about its original thickness.

The uterus increases about forty times in weight during pregnancy; at term it weighs about twenty-four ounces, and its length is from twelve to fourteen inches, its breadth from nine to ten, and its depth, antero-posteriorly, eight to nine inches.

The os uteri, after it is in the gravid state, becomes somewhat swollen, but soft and cushion-like. This softening is at first superficial. Towards the end of the third month, the lips of the os tincæ are softened throughout their whole thickness, and the softening increases from below upward.

The *neck of the uterus* seems somewhat elongated at the first, but at the commencement of the sixth month the length of the cervix seems to diminish; there is, however, no considerable shortening until the middle of the eighth month; during the last fortnight of pregnancy it diminishes very rapidly, and finally is totally effaced.

In primapara the os tincæ is rounded at first, and is not dilated. In females that have had children the ex-

ternal orifice is widely open, and the cavity in the neck is funnel-shaped, continuing to increase until it reaches the internal orifice.

As gestation progresses the texture of the uterus changes. The peritoneum spreads out in all directions without a decrease in thickness; the mucous coat becomes apparent, it grows redder and more vascular, and its folds disappear; the glands of the body of the womb grow longer; the middle coat is enlarged by the increase in size of always existing muscular elements, and the formation of new fibres and increased connective tissue. There is, towards the end of pregnancy, an astonishing development of the vascular system; the lymphatic vessels acquire considerable calibre, and the nerves are developed in every way, although the neurilema is most affected.

The changes developed in the uterine mucous membrane are of especial interest. Its vasularity is greatly increased during menstruation, the glands are enlarged, the membrane thickened, thrown into folds and becomes of a violet color; this condition continuing until the ovule is discharged, or until the last of the menstrual period. The fecundation of the ovum will maintain and increase this vascular condition of the membrane. Its vessels are so enlarged as to cause small effusions beneath the epithelium, which gives to the internal surface a spotted appearance; after two or three weeks it is still more mottled, more puffed up, and furrowed with folds and wrinkles. This membrane is the *decidua*, which is afterwards expelled, with other contents of the uterine cavity.

The DECIDUA REFLEXA is a fold of the decidua in which the fœtus is enveloped, and both of these membranes, which are at the last expelled with the fœtus, are developed from the uterine mucous membrane. The uterine

decidua, after the second month, grows thinner, and its folds are gradually effaced ; after the fifth month it is only one twenty-fifth of an inch in thickness, and it is still thinner at the termination of pregnancy. At the fifth month it is separable from the uterus, and the first trace of the new membrane which is to replace the decidua may be detected under it. A partly uterine membrane may be thrown off when an abortion occurs, during the early months of pregnancy.

CHAPTER VII.

THE OVUM AND ITS DEVELOPMENT.

The ovum at maturity (and not impregnated) is described as being composed of the vitelline membrane, which seems like albumen in appearance, but is a thick, transparent membrane, without determinate texture ; second of the vitellus or yolk, a granular liquid contained in the vitelline membrane, composed of a coherent transparent viscid mass ; third of the germinal vesicle, which is composed of a transparent colorless membrane, enclosing a liquid also transparent ; and lastly, of the germinal spot, that is held in suspension in the liquid that the germinal vesicle contains.

The ovum passes slowly through the Fallopian tubes, and during the twelve days or more that it is passing to the uterus, there is some development, some increase in size, and by the time it has reached the uterus it has become impossible to find in it either vesicle or germinal spot.

It is probable that in its passage it is nourished by the granulations which accompany it, and by absorbing the liquid secreted by the oviduct.

As the impregnated ovum is developed, the chorion, the amnion and the embryo may be observed.

The *chorion*, which corresponds to the membrane lining in the shell of an egg, is found covering the ovum at the earliest period that it has been seen in the uterus. It is smooth internally, but externally it is covered with short round villi, which at a later period remain only where the placenta is developed. The chorion is enveloped in a great measure by the reflected decidua; there is at the outset considerable space between the two, mostly filled at first by the villi of the chorion, though there may be between the two an effusion of blood; these villi soon disappear, and the membranes come in contact.

In that part of the chorion that is not covered by the decidua reflexa, the villi are more and more developed, and they contribute a most important part in the formation of the placenta.

At the same time that the placenta is formed, the villi on the other portion of the chorion is obliterated, so that the principal part of the chorion is a thin, colorless, transparent membrane, united outwardly to the reflexed decidua by short, delicate filaments, and inwardly to the amnion by an albuminous layer called the *tunica media*.

There is also between the two membranes the *vesicula alba*. This bears a perfect analogy to the yolk of an egg; it is the vitellus surrounded by the blastoderm. Its use is to contain nutriment for the fœtus before the development of the placenta.

The amnion is the most internal membrane of the ovum; it is continuous with the margins of the ventral opening

in the fœtus, and closely envelopes the embryo in the early period. Its internal surface exhales a liquid into its own internal cavity, and in this the embryo swims freely.

As this membrane is more and more filled, it presses back the exterior liquid and thereby condenses it until the amnion comes in contact with the chorion. And since it adheres to the abdominal parietes of the fœtus, it furnishes as it extends a membranous sheath to the alantoid and umbilical vesicle, and these vessels, and all parts thus enclosed constitute the *umbilical* cord.

The *placenta* is an appendage of the chorion ; it is a soft, spongy mass, constituting the principal connection between the ovum and the uterus, being destined to the hemetosis and (as we suppose) to the nourishment of the fœtus. The placenta, at the termination of utero gestation, is a flattened body about an inch in thickness at the center ; its shape is circular or oval, and it is from six to eight and one-half inches in diameter ; its internal surface is covered by the chorion and amnion, and exhibits plainly the umbilical arteries and veins which converge to form the umbilical cord. Its fœtal portion is formed by the hypertrophied villi of the chorion, with which its circumference is continuous, and its maternal portion is continuous with the decidua, and is in fact a thickened part of that membrane. As the villi of the chorion are developed on one part of its surface, they ramify and form filaments that engraft themselves upon the uterine mucous membrane and adhere closely. At the same time there is an inverse development of the uterine vessels, which form vast numbers of loops that descend between the villi of the chorion, and extend through to the fœtal surface of the placenta. An amorphous matter is soon thrown out which unites the two parts together.

The placenta is, therefore, composed of two parts, distinct in their physiological action, though they together present but one mass to our view. One part is the fœtal portion formed from the chorion ; the other is the maternal portion formed from the uterine mucous membrane, of which it is a greatly thickened part. After delivery the fœtal placenta comes entirely away with the epithelial layer of the placental decidua, and the placental distribution of the maternal vessels ; a portion of the maternal vessels remains attached to the uterus.

The placenta may be inserted upon any part of the uterine cavity, although it is most usually near the fundus where the ovum must enter the womb. If, as is sometimes the case, it is attached at the lower part, over the orifice of the womb, it causes unavoidable hemorrhage in the later months of pregnancy.

The *umbilical cord, funis, or naval string*, is the connecting link between the child and mother. It commences when the external lamina of the blastoderm with the alantois are so changed as to form a mere cord upon which the two umbilical arteries ramify, and when all these have an enveloping sheath from the amnios. It may be discerned in this state at the end of the first month ; at that time the fœtal intestines may be seen to protrude beyond the umbilicus into the amnionic sheath, but the cord is then cylindrical and very small. There are progressive changes, the cord becomes simplified, the canal of the amnionic sheath is obliterated gradually at its extremity, and as the effacement proceeds towards the umbilicus the intestine is pressed back so that no hernia remains.

There are two arteries in the cord; these arise from the abdominal aorta in the fœtus ; they go by a flexed and tortuous course to the placenta, where they ramify and

are distributed. There is only one vein which returns the blood from the placenta; there the radicles coalese to form the branches; these unite to form the umbilical vein. This is not as flexuous as the arteries, which, being longer, wind around the one venous trunk. After the third month these may be plainly seen in the sheath imbedded in what has been called *Wharton's gellatine.*

Ordinarily the cord lies free and loose in the cavity of the amnion, but occasionally owing to the movements of the child it may be coiled around the child's neck, be tied in knots, or it may escape below the head so as to prolapse during labor.

The length of the cord varies; it is very rarely less than eight inches, and it is sometimes six or eight feet long.

After the birth of the child, the pulsation in the cord ceases within about fifteen minutes. After the cord is cut that portion that is attached to the umbilicus dies and usually falls off about the fifth day.

The blood of the fœtus is ærated or undergoes a change in the placenta analagous to the change that our blood undergoes in the lungs.

CHAPTER VIII.

THE FŒTUS.

The embryo first begins to be distinct about the *third* week ; is then about two lines long, weighing one to two grains ; is surrounded by an amnion which lies loosely about it, and obviously proceeds from the abdominal laminæ ; it presents cerebral vesicles ; there is the appearance of an eye, several arteries are seen though not distinctly formed ; the abdominal cavity is open for a considerable extent in front.

About the *fifth* week the embryo becomes more consistent; the head is disproportionately large; rudimentary eyes are indicated by two black spots ; the abdomen is nearly closed, though at the umbilical aperture a loop of intestine escapes ; the abdominal members are present, and the cord exists in a rudimentary condition; the embryo is nearly two-thirds of an inch long and weighs about fifteen grains.

The successive changes in the development were, 1st, a germ membrane visible immediately after the bursting of the vesicle ; 2d, at some point an aggregation of granules forming the cumulus of the blastoderma ; 3d, the embryo developed lying at this point, as it were upon the membranes, which consist of three superimposed laminæ or layers ; 4th, on the serous layer arise the organs of animal life, the brain and spinal marrow, organs of sense, skin, muscles, tendons, ligaments, cartilage, and bone ;

on the mucous the organs of vegetative life, the intestinal canal, lungs, liver, spleen, pancreas and other glands. The heart and vascular system arise from the vascular layer (if this can be considered a separate one).

About the second week, or perhaps the third, there is a mass of globules loosely connected together forming the *primitive streak of Von Baer*, and around this the *area vasculosa* is developed. The globules of the primitive streak, seem next to be developed into two laminæ dorsales, which is the axis of the future embryo, and the origin of the spinal column. That portion of the fluid that separates the *chorda dorsalis* from the lamina dorsalis is the future spinal cord, and brain. Two other lamina—*laminæ ventrales of Von Baer*—are in the mean time proceeding from the axis of the embryo, one on each side; they grow laterally and converge below the axis.

After the rudiments of organic life have been commenced in the central portion of the serous layer, a fold of its peripheral portion arches over the dorsal surface of the embryo so as to represent a sac, and is composed of two membranes; the one next to the fœtus is the *amnion*, the other is gradually separated from the amnion and joins the serous lamina of the blastoderma; this is the *false amnion* of Pander.

The heart is formed at this early period, and although there is no septum between the ventricles, a vein may be seen entering into it, and an artery passes out which divides into four branches to be distributed and ramified in different portions of the fœtus.

The abdomen is yet an open cleft, in which (but projecting beyond it) is the heart, which is of very large dimensions; behind the heart is the liver, and under the liver the intestine which is attached by means of a distinct

mesentery. At this period (three weeks) the lungs are constituted of five or six lobules, and two large glandular structures may also be discerned along the vertebral column, which are called Wolfian bodies; these anticipate the function of the kidneys. The *alantois* is seen arising from the lower part of the intestinal canal on a little vesicle and extending so as to encircle the embryo.

During the second month the extremities are growing, and become more projecting; the body is curved and the head bent downwards; there are indications of the nostrils and a gaping oral aperture; the forehead is more swelled because of the development of the hemispheres of the brain; the spinal cord is cylindrical of nearly uniform thickness and terminating in a blunt extremity—posteriorly it is open; the *medula oblongata* makes a bend forwards at the top of the neck, and then ascends perpendicularly into the capacious cranium.

The first centres of ossification appear about the seventh week on the clavicle and lower jaw. At this time the kidneys and renal capsules begin to appear. The only trace of muscular fibre is in the diaphragm. The vertebral arches are not yet closed in, and the ribs appear like little streaks; the liver is very large and granular. The stomach is assuming somewhat of its normal form; the urinary bladder is enclosed, but the anus is imperforate. At this time the embryo is about an inch in length.

At two months the rudimentary organs of generation may be distinguished, but their development does not clearly show the sex. The embryo is from one and a half to two inches long and weighs near half an ounce, the head forming two-thirds of the whole.

After this period the different parts are developed with tolerable rapidity. At *ten weeks* the embryo is about two

and a half inches in length. At the end of the *third month* it is from five to six inches long and weighs from three to four ounces. The thorax is closed at all points but is only slightly developed; the cord contains no intestines, and its spiral turns are evident; the nails are beginning to appear; the sex is distinct, and the skin acquires some consistence. At the fourth month the fœtus is six to eight inches in length, and weighs from seven to eight ounces. A fœtus born at this period might live for an hour or two. At *five months* the length of the body, including head and feet, is from eight to ten inches, and weighs from eight to eleven ounces; at *six months* the weight is about one pound, and the length is eleven to twelve and a half inches.

At *seven months* the fœtus is from twelve and a half to fourteen inches long and weighs from three to five pounds. The hands and feet, including the nails, are developed; all its parts are tolerably firm, and their respective dimensions better proportioned than formerly. The scrotum usually contains one or both testicles, they having descended through the inguinal ring, from their original place near the vertebral column; the eyelids are partly open; the skin is very red and covered with down. Many children live and are reared that are born at seven months.

The length of a fœtus born at term is eighteen or nineteen inches, though the utmost limit is more than two feet. The usual weight is from six to seven pounds; children have been born, however, that were as much as eighteen pounds in weight. I suspect that this will never occur unless the term has been extended beyond the usual period.

AT TERM the fœtus that is twenty inches long will gen-

erally measure ten and a half to eleven inches from the crown to the umbilicus. The different parts are well developed and partly covered by a smegma called the *vernix caseosa ;* the head has attained the proper hardness, and the scrotum usually contain the testicles. In female children the nymphæ are generally covered entirely by the labia, the breasts project, and in both sexes contain frequently a milky fluid.

As soon as the child that has been carried the full time is born it usually cries, opens its eyes, and makes some struggling motions with its limbs ; it soon passes urine and feces, and readily takes the breast.

With occasional exceptions the position of the child is unaltered from an early period of pregnancy to its termination, whether the head be upwards or downwards. The arms are generally folded over the chest, the knees drawn up to the abdomen ; the back curved, and the head bent upon the chest, so as to occupy as little space as possible. In ordinary cases the head is directed downwards, and the face looks obliquely, so that in the first and second position the back of the fœtus is turned partly forwards, and the belly in the third and fourth. We are enabled in many cases to ascertain the position of the fœtus in the uterus before labor has commenced, by means of the stethescope, by noting whether the pulsation is felt on one side or the other of the abdomen and observing whether it is heard clearly or not.

The longitudinal diameter of the head is from 4 to $4\frac{1}{2}$ inches, the transverse from $3\frac{1}{2}$ to 4, the vertical 3 to $3\frac{3}{4}$ inches. The transverse diameter of the shoulders and thorax is $4\frac{3}{4}$ to $5\frac{1}{2}$; the widest diameter of the hips 4 to 5 inches. In general the measurements are a little less in the female than in the male.

The head of the fœtus is large, and as it is less compressible at term than other portions it merits a particular description ; we should be acquainted with all its characters, that we may recognize them and thereby determine the position during labor.

The fœtal head is ovoidal in form, the large extremity being posterior. Several bones enter into the formation of the cranium ; they are, 1st, the *frontal* bone forming the forehead ; in the fœtus even at term it is usually divided ; 2d, the two *parietal* bones, one on each side of the head, meeting on the median line at the top of the head ; they help to form the vault of the cranium ; 3d, the occipital bone, forming the posterior and part of the base of the skull ; and 4th, the temporal bones, one on the right and one on the left side below the parietal, completing the lateral portions of the cranium and contributing to form the base of it. The cranial bones are not united to each other by sutures as they are in the adult, but are separated, the parietal bones especially, by membranous intervals, the intervals being larger in some children than in others. These intervals, or *sutures* and *fontanelles*, must be carefully studied.

The *sagittal suture* is the antero-posterior one, and extends from the root of the nose to the occipital bone. It is formed in front by the interval that separates the frontal bone into two halves, and superiorly by that between the two parietals. There is a suture which crosses this, called the transverse or *coronal suture*, which is formed by the space existing between the frontal and parietal bones. When the sagittal suture arrives at the superior angle of the occipital bone, it seems to part and give rise to two oblique lateral sutures which are called *lambdoidal ;* these

are formed by the posterior borders of the parietal bones and the superior one of the occipital.

Just at the point where the coronal and the lambdoidal sutures join the sagittal one, two membranous spaces, larger than those just described, are found ; these have received the name of *fontanelles.*

In cases of head presentation during labor, one or the other of the fontanelles may be felt by the attending practitioner, and this indicates to him the position of the head and the presentation.

The *anterior fontanelle* presents an extensive surface at the place where the transverse crosses the sagittal suture. It is lozenge-shaped, and is bounded by four bony angles.

The *posterior fontanelle* is formed by the union of the two lambdoidal sutures with the termination of the sagittal suture. It is smaller than the anterior one, and is of a triangular form. It is bounded by the occipital bone and the angles of the parietal bones. During labor the bones may overlap each other so that the sutures cannot be felt, but the prominences of the bony margins will aid the diagnosis.

THE PHYSIOLOGY OF FŒTAL LIFE.

The ovule, after it arrives in the uterine cavity, comes in contact at all points with the mucous membrane of the uterus. Its nutrition at first is organic by superficial imbibition ; afterwards, probably the villi of the chorion imbibe the fluids there secreted, and transmit them into the space between the chorion and the amnion, thence it transcends through the walls of the amnion, and a portion is conveyed into the fœtus through the umbilical vesicle. After the placenta is formed there may still be some absorption of some of the nutritive matters contained in the

liquor amnii through the skin of the fœtus, but its growth is principally maintained by an assimilation of that which the radicles of the umbilical vessels take up in the placenta. By means of the extensive contact existing between the vascular apparatus of the two placentas, a transudation probably takes place of some part of the maternal blood, which is absorbed and mingled with the fœtal blood, and furnishes some of the nutritive material.

When mingled with the fœtal blood, the nutritive elements supplied by the mother are devoted to the development of the organs. It is supposed, however, that they undergo changes in the large liver of the fœtus and in its intestines.

There is no true respiration in the uterine cavity, but one function of the placenta is to renew the blood of the fœtus from that of the mother, in about the same way that the blood of fishes is ærated by the water passing through the gills.

Whether in the earlier months absorption is carried on by the surface alone, or whether a portion of the liquor amnii finds its way to the stomach is difficult to decide, but, without doubt, a certain amount of digestion is carried on.

The CIRCULATION of the blood in the fœtus cannot be understood without referring to certain anatomical peculiarities that do not exist in the adult. These characteristics depend on the absence of respiration, and disappear when it is established.

1st. The septum between the auricles of the heart is imperfect, having in its center a valvular oval aperture called the *foramen ovale.*

2d. The pulmonary artery, soon after its origin, gives off a branch, the *ductus arteriosis*, which enters the aorta

just below the arch. The pulmonary arteries are very small.

3d. The *umbilical artery* in the *fœtus* is a large vascular trunk, which is nearly obliterated in after life. The two umbilical arteries run forwards and inwards along the lateral and superior parts of the bladder, then curve forwards to the abdominal wall, along which they ascend to the umbilicus, then pass along the cord to the placenta.

4th. The fœtus further differs from the adult in having an umbilical vein, which comes from the placental tissue, traverses the length of the cord, passes through the umbilical ring, is mostly distributed to the liver, but has a supplemental vein situated at the thick edge of the liver, and leading to the vena cava ascendens, called the *ductus venosis*.

The general effect of all these peculiarities is to render the heart virtually a single one ; to provide for the quiescent state of the lungs, and to modify the distribution of fresh blood.

THE COURSE OF THE BLOOD IN THE FŒTUS IS AS FOLLOWS : The blood circulating in the umbilical vein is, on entering the fœtus, a part of it discharged through the *ductus venosis* into the vena cava ; another part is distributed to the liver, and is brought to the vena cava by the hepatic veins, and then mingles also with that from the inferior extremities, and then with that from the upper extremities as it passes into the right auricle. A part of this is transmitted through the right ventricle, and thence (except a supply for the nourishment of the lungs) through the ductus arteriosis into the descending aorta. A second and larger part passes through the foramen ovale into the left auricle, then into the left ventricle and arch of the aorta, the branches of which supply the head and upper

extremities. The continued stream passes into the descending aorta, mixing with that already described. The whole now descends to the lower part of the aorta, where a portion is sent to the inferior extremities, but a larger part is drawn into the umbilical arteries, and is carried by them into the placenta.

After birth remarkable changes take place. Something in the circumstances in which the child is placed stimulates respiration and crying, by which means the lungs are inflated, and space is afforded to the pulmonary circulation, which supercedes the use of the foramen ovale and ductus arteriosis ; the blood from the lower extremities cannot pass through the umbilical arteries, and does pass through the ascending cava into the right auricle and ventricle, then into the lungs, where it undergoes analogous changes to those effected in the placenta, and is distributed to the body generally. The fœtal openings are generally obliterated in the course of a week, though the foramen ovale, or the ductus venosis, may continue pervious for two or three weeks ; but soon the ductus venosis and the umbilical arteries are obliterated and the adult circulation established.

PART III.

Pregnancy and Parturition.

CHAPTER I.

DIAGNOSIS OF PREGNANCY.

A few of the early signs of pregnancy are not made available to the physician ordinarily when his opinion is demanded. A woman is naturally unwilling that her physician, if he be a man, should make even a digital examination, and this makes it more necessary that the nurse should know all the rational signs.

One of these signs is the changed color of the mucous membrane of the vagina and labia. This membrane is of a pale red color, but it becomes of a violet hue during the time of menstruation, and if a woman becomes pregnant, the violet or deep red color becomes continuous.

There is also, even in the commencement of pregnancy, a peculiar odor to the secretion from the vagina and os uteri, which has been compared to that of the vernix caseosa.

There is no sign of pregnancy by which we can always distinguish it in its early stages; in some instances nearly all the rational signs are absent. The general condition

of a pregnant woman is changed in a greater or less degree, but all are not changed alike.

Generally she is plethoric, the pulse is fuller and quicker; the quantity of circulating fluid is augmented, the quality altered by the increase of fibrine; but these changes are not always obvious. Well marked sympathies are excited in various organs; the nervous system may suffer especially; the woman's temper and disposition may change; she may become capricious, may have likes and dislikes in eating, especially if her digestion is weak; there may be loss of appetite, heartburn, increased flow of saliva, toothache, excitability of mind, sleepiness, etc.; but even when many of these symptoms are present, even when the liver and kidneys are affected, so that the skin is sallow or discolored in patches, and irritability of the bladder causes much pain and distress, these various signs may only furnish a sum of probabilities amounting *almost* to certainty.

In some cases of pregnancy the skin, instead of becoming sallow, is more florid, with occasional eruptions on the face.

Some women become fat during pregnancy; others lose flesh; their faces, in the early months, are pinched and pointed, and their features altered.

Milk in the breasts, especially in the first pregnancy, is a sign which is said to be reliable; but it is true of some women that, during their period of menstruation, their breasts enlarge; there is a sensation of fullness, with throbbing and tingling pain in them, and that a milk fluid may be secreted; the same symptoms that are present with others at the second month of pregnancy.

Another change is a more marked sign in the breasts. There is at first a soft and moist state of the skin, and the

little glandular follicles around the nipples are bedewed with a secretion. This may often be seen at the second month, and it may also be noticed that the veins of the breast look more blue, and that the breasts themselves are firmer and more knotty to the touch.

There are, however, other signs which are more to be depended on than these that have been mentioned.

Females *cease to be regular during pregnancy.* A healthy married woman, during the period of child-bearing, bases her prediction upon this sign, and is seldom disappointed. But women are not all healthy; disease and disorder of the womb, or other organs of the body, especially of the lungs, may cause suppression of the catamenia; and, on the other hand, the discharge may recur for several months after conception, or even monthly during the period of utero gestation; and, in anamalous cases, some young married women, who had hitherto been quite regular, ceased to menstruate for several months without any known cause.

Morning sickness is one of the earliest signs of pregnancy, as it often occurs within two weeks. The nausea may be slight or it may be very distressing; it may happen to be soon relieved, but it usually continues for three or four months or longer. It varies also as regards the time of day during which it continues to be bad; but if it recurs at the regular time and in the regular manner, it is of great value as an evidence of pregnancy, when combined with other symptoms.

A dark brown areola around the nipple may usually be noticed at the end of the second month; this is a distinguishing sign, especially if it be a first pregnancy. A month or two later, the dark color is more obvious, and it is darker in persons with dark hair, etc. It may be de-

scribed as being a dark circle, somewhat swollen, or with a puffy turgescence, both of the nipple and the surrounding disk ; the surface of the areola studded over and rendered unequal by the prominence of the glandular follicles, the integument covering the part soft and moist ; sometimes small mottled patches, of a whitish color, scattered over the outer surface of the areola, and for about an inch all around it.

These marks are quite plain at the fifth month, and at six months a number of silvery *streaks* may be observed.

Quickening is one of the most important signs of pregnancy, and occurs about the fourth or fifth month ; not because the child is then first alive, but because the womb then rises higher in the abdomen, and because the child has reached a further state of development. Quickening is a proof that the woman is near half her time gone ; though it may happen that the sensation is observed as early as the third or fourth month, instead of at four and a half months. In some cases women do not know the time when they quicken, as only a slight sensation is felt ; this some compare to the fluttering of a bird. But a lady may at that time be faint, or giddy, or sick, though there seemed to be nothing more than a mere pulsation. Subsequently, however, the movements become stronger and more frequent. The motions of the child may be felt by a third person on placing the hand on the woman's abdomen, especially if the person's hand be cold. I have known one case in which, by placing my hand on the woman's abdomen, I caused motions which similated active movements of the child, although there was no fœtus present.

INCREASED SIZE AND HARDNESS OF THE ABDOMEN is characteristic of pregnancy. Enlargement of the abdo-

men may be from flatulence, but such enlargement is not persistent; the belly is large one hour and small the next, and on pressing the bowels firmly, a rumbling of wind may be heard, which perhaps may move about, and on percussing (tapping) the part, a hollow sound may be elicited, as from a drum. A large abdomen may be due to fat, but there is a soft and doughy feeling that is characteristic of fat. On the contrary, in pregnancy, hardness, solidity and resistance to pressure characterize the gravid uterus, and the enlargement is not only persistent, but gradually increasing. It is true that when a very fat woman is pregnant, percussion or palpation of the abdomen may be fruitless, and any certain diagnosis cannot be made, but in most cases, if we are careful to observe these conditions, and also whether there is a distended bladder and rectum, the diagnosis can be made after the fourth or fifth month.

To make an examination by percussion and palpation, let the female lie down, with the head raised and the thighs flexed on the abdomen; then examine with both hands, especially near the pubis. Pressure with the ends of all the fingers, gradually moving them upward, will enable us to detect the womb, if it rise above the symphasis, and also the size and height of the fundus.

Ballottement, or *repercussion*, is used as a means of deciding upon the presence of a fœtus; a means that is most available about the fifth and sixth month. The female examined should be in an upright position, or if she be in bed, her shoulders should be raised. We are directed to introduce the forefinger into the vagina and touch the cervix uteri, or, rather, in front of the neck upon the walls of the uterus; then slightly jerking upward by slightly flexing the first joint of the finger; observe if something

recede from it and fall again in a moment. The ballottement is said to be a sensation "analagous to that produced by placing a ball of marble in a bladder full of water and then striking the bladder with the finger just under where the ball rests, when the latter is thrown up and falls from its own weight upon the finger that displaced it."

When the vaginal touch is practiced, while one finger remains in the vagina, palpation of the uterus with the other hand may assist in the diagnosis by depressing the uterus, or by holding it firmly in place. Then the jerk of the finger upon the head of the fœtus causes it to float upwards a little in the liquor amnii and descend.

AUSCULTATION is used to decide many cases of doubtful pregnancy. The pulsations of the fœtal heart are generally perceptible by the fifth month. The examination may be made by applying the naked ear to the abdomen of the mother, she being placed on her back in the bed with her head raised.

The *fœtal pulsations* are frequent, generally from 120 to 140 a minute. The *uterine soufle* or bellows murmur may often be heard as early as the fourth month; it is synchronous with the mother's pulse; its seat is said to be the uterus, and some believe that it indicates the position of the placenta. This sound and the *pulsation of the umbilical cord* are not very important diagnostic signs, and the same may be said of the presence of *kiestiene* in the urine, which may, however, be detected as early as the third month.

Some of the ailments that attend pregnancy I will now merely mention: There may be irritability and a disposition to inflammation; violent and obstinate vomiting; indigestion and depraved appetite, heartburn, costiveness, hemorrhoids, liver spots or blotches, especially about the

face ; diarrhœa or dysentery ; strangury, with a frequent inclination to void the urine ; leucorrhœa ; varicose veins in the legs, thigh and abdomen ; inquietude and sleeplessness ; dropsy, or an œdematous condition of the lower extremities ; prurigo vulva ; either of these may be more or less troublesome, but can hardly be regarded as diagnostic signs. Some remedies for these will be mentioned hereafter. (F. 69, 72, 75, 81, 131, 173, 206, 220).

The abdominal walls are often distended beyond what the woman is able to bear without inconvenience, as the skin may become inflamed and crack. It is much more common that the true skin beneath the epidermis cracks, and, although the outside is not altered, there often remains upon the abdomen of women who have had children a number of small marks, or little whitish streaks.

CHAPTER II.

ABORTION.

If a premature expulsion of the fœtus occur before the end of the seventh month, it is called an *abortion*, or *miscarriage ;* subsequent to this period, premature labor.

The cause of abortion may be in the ovum or in the mother, and it is more liable to occur at the beginning of each month corresponding to the menstrual period. The maternal causes may arise from the condition of the mother or may be accidental ; may be anything that injuriously affects the mind or body. Debility of constitution, consumption, leucorrhœa, uterine irritation, febrile complaints, and obstinate constipation may be causes, but some women who are weak or sick retain the ovum with

wonderful tenacity. Blows, falls, violent concussions, excessive or sudden exertions, straining, severe coughing, taking long walks, riding on horseback, or over rough roads in a carriage, a long railway journey, fright, sudden shocks, anger, joy, sorrow, good or bad news suddenly told, taking a wrong step in ascending or descending stairs, lifting heavy weights, violent drastic purgatives, calomel, dancing, and tight lacing may excite the uterus to action and effect the expulsion of its contents.

It is an unfortunate thing for a woman if she miscarry with her first and second child, for it often becomes a habit. Having once miscarried, she is more likely to miscarry again, and by repeated miscarriages her constitution is broken, and the chances of her ever having a living child become very small.

A woman may experience some *threatening or warning symptoms of miscarriage* for one or two days before those of labor supervene. There is usually a feeling of languor or weariness, of lassitude and depression of spirits, and a sense of uneasiness, and then, after these premonitory symptoms have lasted for some time, there may be a discharge of mucus or blood from the vagina. The show may increase to flooding, and soon there may be pain, at first slight and irregular, afterwards of a grinding character, and subsequently severe, irregular, and bearing down. At this stage we may be quite certain that the pains will continue to recur until the fœtus at least, if not the afterbirth, have passed into the vagina.

The progress in different cases is, however, quite dissimilar. In the beginning of pregnancy the expulsion of the ovum might closely follow the accident that caused it. For example, a woman might slip in descending a staircase and fall violently on her seat, causing immediate

expulsion of the ovum, with a large quantity of fluid blood. There are some women who have acquired the habit of aborting, and the ovum passes out of the womb with scarcely any pain, little or no hemorrhage, and the woman speedily recovers. But it will very seldom happen, after the first six weeks, that there is not some interval between the accident and the consequent abortion, and that there is not considerable and protracted pain.

If the cause of the abortion affects the mother instead of the ovum, she generally experiences, at the time of the accident, a sharp pain about the loins or abdomen, which may continue slightly for several days, and then be renewed, with violent uterine contractions, and some serous and then bloody discharges from the vagina.

The progress of a miscarriage is not as regular as a labor at full term. In many cases there are shiverings succeeded by fever for a day or more preceding the hemorrhage. Severe indisposition may continue for several days. There may be not only considerable uterine pain, but much pain in the bladder and loins ; a sense of sinking in the epigastrium, of weight near the vulva and anus, and an ineffectual desire to urinate.

Such symptoms continue a longer or shorter time, and then usually the fœtus alone is expelled, the placenta being retained. The latter is generally detached after a time, or it may (if within the first three months) be discharged and pass out in a dissolved condition, with the lochia. Very alarming hemorrhage may precede and accompany abortion ; this makes the case one of danger at the time, and may permanently affect the health of the woman afterwards. The flooding may continue after the expulsion of the ovum ; but I have always found that in such cases there was a portion of the placenta that was

detached, and that might be removed, though not perhaps without some difficulty. A good physician should always be called in cases of continued flooding.

The patient ought always to preserve any and every substance discharged, that it may be showed to the physician. He should make a digital examination, and he usually finds the os uteri to be partially dilated, and a portion of the placenta hanging in the orifice. It has always been my practice to see that all was removed before leaving my patient, and I have known very dangerous hemorrhage to occur where this rule was not observed. The placenta can generally be seized by two fingers and removed ; but if persevering efforts are necessary, they should not be relinquished until the safety of the mother is assured, which cannot be while the ovum, or membranes, or placenta remain in the uterus separated from their connections.

But it should always be considered especially important to PREVENT THE ABORTION. If a woman is prone to miscarry, she ought, as soon as she is pregnant, to lie down a great part of the day ; she must keep her mind calm and unruffled, and must live on plain diet ; she should retire early to rest, and *she must have a separate sleeping apartment.* She should avoid taking active physic, but keep her bowels open by diet or by the mildest aperients, or, possibly, daily enemata. Gentle exercise may be taken, alternated with frequent rest. Cold ablutions are proper every morning, but the body should be rubbed afterwards with a coarse towel.

The most usual time for a woman to miscarry is from the eighth to the thirteenth week, but if a woman have a particular time, which to her is the usual period, whenever that time approaches she should be unusually careful.

Let her lie down more than she usually does ; let her avoid exciting amusements. She might try to keep her bowels open by the external application of castor oil, or by the mildest aperients, or by hot water enemata.

If slight hemorrhage and trifling pains come on, we should seek to arrest the abortion by giving perhaps grain doses of opium every four or five hours. If the hemorrhage is severe, a drachm dose of fluid extract of ergot may be given, and a large draught of cinnamon tea ; perhaps a quarter of a grated nutmeg, and, in extreme cases, a spoonful of brandy with it.

But let it be understood that in all such cases a physician should be called as soon as possible ; and while waiting for him the patient ought to lie on a hair mattress ; a vaginal injection of hot water may be given ; she should have but scant clothing upon the bed ; her room should be well ventilated, and if she is faint from the loss of blood, a little aromatic ammonia may be given.

CHAPTER III.

PARTURITION.

FALSE PAINS occur most frequently in a first pregnancy, but most pregnant women have occasional pains, and these become more violent within three weeks of the full time. They may be owing to a disordered stomach, as well as to the action of the uterus ; but they usually come on at night, and are liable to be mistaken for labor pains. They are, however, unattended with show ; they often change from place to place, perhaps going successively to the hips, loins, lower extremities and abdomen ; they

come on at irregular intervals, and are at one time violent, at another feeble, and they occasion no dilation of the os uteri ; but true pains come on with some regularity, and usually increase in severity. False pains are from various causes, such as fatigue of any kind, especially too long standing, sudden and violent motions of the body, costiveness or diarrhœa, general feverishness, agitation of the mind, or a spasmodic action of the abdominal muscles. It is necessary to adopt the means used for the relief of the pains to the apparent cause, and generally to give an opiate proportioned to the degree of pain, or to repeat in small quantities at proper intervals till the patient shall be composed.

PERIOD OF GESTATION.

The duration of pregnancy is not always absolutely a certain number of days. The usual term is ten lunar months, or nine calendar months and one week. If we could have correct records of all cases we should probably find that half the cases of pregnancy terminated in labor in the fortieth week, but that in a few instances the term was prolonged to the forty-fifth week, and that in as many cases women were delivered of fully developed children as early as the thirty-seventh week.

A woman may make her count pretty correctly as follows : She should first note the last day of her being unwell. Let forty weeks from that day be marked in an almanac, and she may expect her labor to come on near that time.

It may happen that a woman who never has her menses while she is suckling, may become pregnant and not have a date to count from ; but she ought in that case to reckon from the time that she quickens. Although quicken-

ing takes place at various periods, she may then consider herself nearly half gone in her pregnancy, and calculate that in four and a half months she will be delivered.

A woman may have a show for one or two monthly periods after her gestation commences, but the discharge may be distinguished from the regular menstrual fluid by its being either small in quantity, or by its clotting, and generally by its lasting but a few hours. The woman should reckon from the time when she had her last regular menstruation.

PARTURITION.

NATURAL LABOR. The uterine functions are characterized by periodicity. If an abortion occurs that is not the result of an accident, it is generally at what would have been, but for conception, a monthly period, and even injuries are more likely to produce their bad effects at that particular time. So the normal period for parturition corresponds to a menstrual period, and generally labor may be looked for at about the tenth period after the last appearance of the catamenia. We can hardly tell why it so uniformly happens at that particular time ; the process is analagous to the falling of ripe fruit—it drops because the fruit is fully matured.

It is not in accordance with the plan of this work to dwell at all upon any other than what is called natural labor, but I shall include in this class all such as are terminated by the natural powers, whether they be head, face, breach, or foot presentations.

By PRESENTATION, I mean that part that presents itself at the brim of the pelvis, so that the accoucheur's finger impinges upon it as the end is passed into the center of the os uteri.

The DIAGNOSIS of the different presentations is made by the touch. The head may be known by the hardness and roundness, and more certainly by the fontanelles and sutures; the breach by its general softness, and by the tuberosity of the haunch bone; by the cleft between the buttocks, the scrotum or the vulva, and the anus; the knee by the hardness and roundness of the bone; the foot by its form, its being at right angles with the leg, the nearly equal length of the toes, the narrow heel, etc.; and the face by the inequalities of the presenting part. (These inequalities cannot at first be felt; upon touching it we first perhaps detect the brow, then, as labor progresses, we may feel the nose, mouth, etc.) The head presents in about 98 cases out of 100.

PHYSIOLOGICAL PHENOMENA OF LABOR.

According to the division made by standard authors on parturition, its first stage extends from the beginning of labor to the complete dilatation of the os uteri; the second terminates by the birth of the child, and the third by the expulsion of the placenta.

During the last two or three weeks of the term, the uterus sinks lower in the pelvis, and seems to spread out laterally; the lungs and stomach are not so much compressed, and respiration and digestion, if difficult, become more easy, and often the patient becomes more cheerful and active. The precursory symptoms of labor vary in intensity in different women; but it may be observed pretty generally that there is more activity and disposition to movement for one day preceding the real labor.

But during the last few days of the gestation there are contractions of the uterus, which, though short and distant, and not attended with much pain, are effective in dilating the cervix, and preparing for the subsequent labors.

The subsidence of the lower end of the uterus into the pelvis, however, causes many unpleasant symptoms. The pressure upon the bladder renders a frequent evacuation of its contents necessary ; there is often an ineffectual desire to urinate, and sometimes strangury. There is often a sense of weight about the anus, an irritable state of the bowels, occasional griping pains, and a desire to go to stool when but little is passed, and sometimes diarrhœa. The œdema and varices of the lower extremities augment, the hemorrhodal vessels swell up, and the piles are larger. These precursory symptoms are manifested more in primapara than in others. To some, walking becomes at this time impossible.

There during the last month, and especially toward the close of it, painless uterine contractions ; there may be at first a sort of squeezing sensation with it. But about twenty-four hours previous to the commencement of actual labor, these contractions are accompanied with some pain and are periodical, recurring perhaps every twenty or thirty minutes. If an examination be made of the os tincæ at the COMMENCEMENT OF LABOR it will be found that the rounded collar of the os is already effaced. The pains then suddenly become acute, and it can be observed that the uterus contracts if we notice its greater hardness and roundness during a pain. The os uteri if somewhat dilated closes partially with each contracting, and it can be observed that its margins are growing thinner though tense and resistant at the time of the pain.

The contractions distend the membranes ; these are first pressed *on* the neck, then *into* it, then as soon as the dilatation is sufficiently advanced engage in it in the form of the segment of a sphere, whose dimensions progressively increase with the dilatations.

There is now and perhaps has been for several hours a glairy discharge from the vagina, which becomes streaked with blood, there are perhaps shiverings or rigors (not accompanied with a cold skin), the pains increase in force and frequency, the pulse is hard, full, and rather frequent, the countenance is flushed, often there is vomiting, and the patient is prone to despond and be discouraged.

She is less agitated after the pain subsides, though it does not cease entirely. During the interval the margins of the os again become supple, the membrane that was tense while the pain lasted becomes flaccid, and the child's head can be more plainly felt. As the contractions are repeated the os uteri dilates more and more until it is completely opened and no part of its margin can be touched ; though very frequently from some obliquity of the uterus, the margin on one side can be observed pushed down before the head of the child, while that on the other side cannot be reached. In ordinary cases the membranes are ruptured and the waters escape at the commencement of the second stage, and the time occupied by the first stage is nearly three-fourths that for the whole labor. But the duration of the stages as well as the time occupied by the parturition is exceedingly variable, and the same may be said in regard to the duration and character of the pain.

We may observe here that pain is nearly inseparable from the contractions of the uterus, so that in common language the two expressions are used indifferently ; but using the word in its ordinary sense the pain in the first stage of labor is different from that in the second. What are called grinding pains characterize the first part of labor, and although they differ in different individuals, they are pretty generally so severe as to cause the patient to

cry out. As soon as the labor advances to *the second stage* there is a change in the character of the pains. They are more frequent and longer and the intervals shorter; but though the suffering may be greater the cry is more suppressed, the bearing down is carried to a greater degree, and each pain is succeeded by a calm more perfect than that in the first stage. Should the interval be rather long some patients get a little sleep between the pains, but if there has not been a bursting of the waters previously there is generally now a pain sufficiently hard to break the membrane.

Either in the first or last part, or during the whole of the labor, the woman says that the pain is in her back, it being in the lumber and dorsal region; the grinding pain she speaks of as being forward, they seem however to go through from the umbilicus to the sacrum. In cases where there is rigidity of the uterine orifice, there is I believe pain especially in the back; and when the os becomes fully dilated, the pains are bearing down; the patient at the accession of a pain holds her breath, and seizing hold of something with her hands, brings the muscles of the back and abdomen and extremities to aid the expulsive efforts of the uterus. I do not doubt that this straining of the mother at this time is advantageous; these efforts of the mother should not be encouraged, however, at the first part of the labor, because then they do no good, nor at the very last, as combined efforts then may rupture the perineum.

As the head advances through the pelvic cavity the pressure upon the nerves which pass through it gives rise to cramps in the thighs and legs.

As the head passes into the vagina the walls become flabby and the canal seems to enlarge and elongate and to

be prepared to yield to the pressure of the head. If an internal examination be made the head will be perceived filling the cavity, descending with each pain and receding at its conclusion—the advance ordinarily exceeding the recession, though sometimes the gain is not perceptible. When the head rests on the perineum, that offers some resistance, which seems to stimulate the uterus and abdominal muscles to greater efforts and more forcible contractions.

If it be a first labor there may be at this point a little delay in its progress. But the fœtal head being forced down by the rapidly recurring pains so presses against the floor of the pelvis that it yields and becomes bulging in front, and distended, though there still is recession as the pain intermits. But adequate force is called into action ; each pain gains upon the advance made by its predecessor ; the vulva partially opens, and at each pain they open more and more ; the resistance of the parts is finally overcome. After the perineum has given the head its proper direction in its transit, there usually comes a hard pain—forcing a loud cry from the woman—another pain succeeds immediately, which expels the head altogether from the parts ; then after a short rest the uterine power is again exerted to expel the body of the child.

There may be an interval of a few minutes before the pains return with sufficient force to expel the shoulders, but the child is in no particular danger ; it is best to wait awhile, the nurse in the meantime making pressure with her hand over the uterus, before any traction is made on the head or shoulders. If the body is very large, however, it may be well soon to draw a little on the head or to reach with one finger into the axilla and to bring down

the lower shoulders ; then the rest will be delivered without any difficulty.

The intense suffering of the mother is now exchanged for perfect joy or ease ; there is at once a transition from extreme misery to total freedom from pain, though the labor is not yet completed. Ordinarily a few pains return before many minutes, and complete the last stage of labor —the expulsion of the placenta. Sometimes the contractions that expel the child, expel also the membranes and placenta ; but more generally they are only partially detached or they may be adherent and not easily removed.

After the birth of the child, and the tying of the naval string, it is proper to apply the hand upon the abdomen of the mother to ascertain whether there be another child, and whether the uterus be contracting properly. I advise that an effort should be made immediately to remove the afterbirth and secundines, making firm pressure over the womb ; this will generally stimulate the uterus to make good contractions, and may assist in pressing out the placenta. I do not advise that a midwife should pull upon the cord, but it is my practice to press the fingers of my right hand well into the vagina, and as soon as possible grasp a little of the placenta ; my left hand at the same time pulling slightly on the cord, and thus by combined effort removing the afterbirth pretty quickly.

I have never had much trouble about retained or adherent placenta in cases where I myself officiated in the delivery, and I attribute my good fortune in this respect to the fact that I do not tie the placental portion of the cord, preferring to let some blood discharge from the afterbirth, thus diminishing its size, and then if necessary I direct that considerable effort be made in the way of squeezing and pressure and friction over the uterus.

It is true that if nothing is done a pain will usually come on within twenty minutes that will expel the afterbirth very effectually including all the membranes, and considerable clots of blood; but I apprehend that in many cases during this delay there is an hourglass contraction of the womb comes on, which retains the placenta and prevents its proper separation.

But before attending to the placenta, the necessary attention should be paid to the child. A little cold water sprinkled on it will usually make the child cry, if it does not breath immediately after it is born, and this makes the change in it from uterine to breathing life. The child may then be separated from the mother by cutting the cord. After the removal of the child it is proper to endeavor to deliver the afterbirth, though it may not be necessary at first to do anything more than to use friction over the uterus with moderate pressure, which may be gradually increased.

CHAPTER IV.

MECHANICAL PHENOMENA OF LABOR.

The cavity of the uterus and that of the pelvis form a continuous PASSAGE through which the child must be forced in its exit from the womb at birth. The uterus possesses the character of muscularity and is the main agent in the expulsion of the child. By its own muscular action the cavity of the uterus is diminished and pressure made on the fœtus, forcing it down towards the orifice, distending the cervix, and dilating the passage. During the second stage of labor the power of the uterus is aided

by the voluntary muscles of the abdomen and by the depression of the diaphragm.

The character of the passage will be brought to mind by recalling what was heretofore said of the diameter of the pelvis. It will be remembered that the usual antero-posterior diameter of the brim does not exceed $4\frac{1}{2}$ inches while the transverse is $5\frac{1}{4}$ inches, and that at the lower outlet the antero-posterior diameter is about 5 inches and the transverse about 4 inches.

The FIRST OBSTACLE which the child meets in its progress is the cervex uteri. This being composed partly of muscular fibre which acts somewhat as a sphincter, and partly of elastic celular tissue, holds the sphincter in the tissue with a tenacity which is not easily overcome. But repeated muscular contractions of the womb force down the bag of waters, which forms a sort of wedge, and this is forced down and into the os uteri, compelling it to open.

There are also muscular fibres in the uterus which have a longitudinal as well as some that have a circular course, and the action of the former tend after a time to retract the os, over the fœtal head.

The *second obstacle* is the bony brim of the pelvis into which the head of the fœtus cannot pass until its long diameter is adapted to certain diameters of the pelvis. The diameter of the bony pelvis is diminished over one-fourth of an inch by the soft parts upon it, but the oblique diameter of the pelvis will admit the long diameter of the head of the child, which does not often exceed $4\frac{1}{2}$ inches. The head usually presents in this way, and passes in a somewhat spiral manner until it arrives at the outlet where the diameters are adjusted to each other. The head is, however, too large to pass, even in this way, were it not that it admits of a degree of compression to facilitate the

entrance and progress through; this moulding is effected by the continued pains. The head of the child which presents at the brim with the occiput towards the left acetabulum rotates during the passage, so that the occiput at its exit is directly under the symphasis pubis; the cause of the rotation is found in the form and direction of the passage and in the shape and size of the fœtal head.

This presentation and position is the most common one, though either of the following is liable to occur. By naming the position we indicate just how a presenting part lies, or is turned. We adopt the following classification, which accords with several good authors:

PRESENTATIONS AND POSITIONS.

Presentations.	No.	Position.	Name of Position.
A—Vertex or head	1	Occiput to left acetabulum.	Left occipito-iliac anterior.
	2	" " right "	Right " " "
	3	" " Symphasis pubis.	Occipito pubic.
	4	" " r. sacro-iliac junc.	R. occipito-iliac posterior.
	5	" " l. " " "	L. " " "
	6	" " promon'y of sacrum	Occipito sacral.
B—Breach, including inferior extremities.	1	Sacrum to left acetabulum.	Left sacro-iliac anterior.
	2	" " right "	Right " " "
	3	" " symphasis pubis.	Sacro pubic.
	4	" " r. sacro-iliac junction.	Left sacro-iliac posterior.
	5	" " l. " " "	Right " " "
	6	" " promont'y of sacrum.	Sacro sacral.

C—Body, including shoulders, elbow and hand.

D—Face, including six varieties.

The right occipito-iliac posterior (A 4) position is not a very uncommon one, but that variety which is described and named as the left occipito-iliac anterior (A 1), in which the occiput is directed in front and to the left, is most frequent. These and other vertex presentations may be recognized even in the commencement of labor through the vaginal walls, the head being known by its rounded spheroidal surface.

Supposing that we have a case of the kind that is most common (A 1), and that labor has begun, we may intro-

duce the finger through the os uteri and we encounter a rounded, smooth and resistant surface, which is the anterior part of the head, and then by directing the finger upwards and backwards it will come in contact with the sagittal suture.

If the direction of the suture is oblique, and if it runs from before backwards and from the left towards the right, the position must be either the left anterior or the right posterior occipito-iliac one. (A 1 or A 4).

To complete the diagnosis we follow with the finger the sugittal suture until it reaches the fontanelle, and this determines the position. If the posterior fontanelle is found to the left and in front, and the anterior one is to the right and behind, the position is A 1, or the left antero-occipito-iliac one. The back of the fœtus is turned forwards and towards the left side, while its face and anterior plane is turned backwards and towards the right, and the occipito-frontal diameter of the child's head corresponds to the oblique diameter of the pelvic brim.

As the labor progresses and the head is forced down in the pelvis, it is also more strongly flexed on the chest and the occiput is pressed down in the excavation. With the occiput thus presenting, it traverses all the space between the superior and inferior straits until it reaches the floor of the pelvis; there it makes what is sometimes called the pivot turn—it executes a movement of rotation, which carries the occiput behind the symphasis pubis and the forehead towards the hollow of the sacrum; then the head being pressed forwards and stretching the perineum, the forehead and face being disengaged from it, emerge; then after the perfect expulsion of the head it again rotates, the occiput turns somewhat to the left thigh and the face towards the right thigh.

In the beginning of labor the shoulders are turned so as to correspond to the oblique diameter of the pelvic cavity, but they pass through the pelvis in a transverse position. After they reach the inferior strait, the body rotates so that the right shoulder of the child turns towards the left side of the mother and the wide diameter of the shoulders is accommodated to the wide diameter of the strait, and the rotation of the head, which is free externally, is secondary to the rotation of the shoulders.

In the EXPULSION OF THE BODY the right shoulder, or sub-pubic one, is the first one to appear in the vulvar fissure, but the left or posterior one may be disengaged at the commissure of the perineum before the right one is delivered; the remainder of the trunk is expelled very soon, describing a prolonged spiral course in its passage.

A child originally in the RIGHT POSTERIOR-ILIAC position becomes converted towards the last of the labor into an occipito pubic or anterior one, and the labor terminates as it does in A 1, when the occiput was originally in front. It is the left shoulder, however, which gets behind the arch of the pubis, and the occiput is directed towards the *right* thigh after the head emerges.

In some instances, though rarely, the child originally in A 4 position remains with the occiput behind to the termination of the labor. In such cases the forehead comes under the pubis and remains there for a time, while the occiput traverses the whole circle of the perineum; then the whole head and face is immediately delivered.

It is not deemed necessary to describe here the mechanism of labor in the more unusual varieties which are so very numerous.

As regards PROGNOSIS, head presentations are the most favorable of all, and those in which the occiput looks an-

teriorly in the beginning of labor are more favorable than those in which it is turned posteriorly. In occipito-posterior positions the labor is more tedious than when the occiput is in front, and the expulsion becomes particularly difficult when the head maintains its original position and does not rotate or take the pivot turn.

Upon the fœtal head after it is delivered there is almost always a protuberance to be found—a tumefaction, more or less considerable upon some point of the vertex; its greater size indicating a longer continuance of the labor, and its seat indicating in what position the child was born. This tumor is almost always located on one of the posterior superior angles of the parietal bones, and shows that the occiput escaped under the pubic arch. During the labor the whole head is strongly compressed except at one point on the vertex, which therefore becomes the seat of a sero-sanguinolent infiltration. This tumor disappears usually within forty-eight hours; if it does not, it may properly be punctured. It may contain either serum, or serum and blood, or grumous blood.

CHAPTER V.

DIAGNOSIS OF ARTIFICIAL LABOR.

When the expulsion of the fœtus takes place from the efforts of nature alone, the labor is called by some authors spontaneous or natural, but when art is obliged to interfere it is called artificial. It would be very useful to us if we could always decide in the commencement of labor whether the assistance of art would be required, and I will group together in a few pages such instructions as I am able to give on this important subject.

The nurse or midwife will not very generally be able to decide any point by auscultation, but she as well as the physician may judge from the appearance of the woman, from her past history, from palpation of the abdomen, and from vaginal touch. She should accustom herself to judging by all these means, that she may be able to decide early whether the help of an accoucheur will be *imperatively* needed.

No one can decide certainly from simply seeing a patient in the beginning of labor, whether her labor will be natural and spontaneous, or artificial; but I have many times when first looking at a lady, if her complexion was fair, and her form good, but rather tall, predicted that her accouchment would proceed regularly and favorably. But in forming our opinion we need to know something of the previous health and present ailments of the patient, and, if a multipara, the character of former labors. If nausea and vomiting or any other ailment has reduced

her strength so that she is exceedingly weak, this may give rise to some reasonable apprehension ; but I have known a woman that could scarcely retain a morsel of food on her stomach for seven or eight months, that had become very weak indeed and exceedingly emaciated, who yet endured her labor well and soon recovered. The general rule is, that the more perfect the woman's health is, the better she is fitted for child bearing, but if her general health and strength is reduced below its proper standard by some previous or accompanying disease, such for example as consumption, she may endure the labor very well, and succumb to the disease afterwards.

Pregnant women are liable to be attacked with epidemic, endemic, and sporadic diseases. Eruptive fevers, etc., may attack purturient women, and if they do, the disease and labor in every case will have a reciprocal influence on each other—the disease will complicate the case. Influenza or intermittent fever may attack a woman at any period of gestation, and there may be no serious results. Cholera, small pox, typhoid fever, scarlet fever, measles, pneumonia, and jaundice are liable to cause abortion, and there is danger of fatal results, or either of them would be a dangerous complication at the time of labor. Syphilis would be a cause of abortion or premature labor, and any disease which allows the mother to carry the child the full term may reduce and weaken her. Glandular engorgements and scrofulous ulcers improve during gestation, but if the woman is suffering from a fracture, the bones will not unite very well. Tumors in the abdomen and pelvis may be an obstacle to delivery, and ulcerations of the cervix may also be harmful and protract the labor, as also may constipation, dropsy, and abuminaria.

The latter may not be detected without an analysis of

the urine, but dropsy will be obvious as soon as it exists. The evidences of tumors and ulcerations are found by palpation and the touch—sometimes by the use of the speculum.

After learning the present appearance and the former history of the patient it may be necessary to examine further perhaps by palpation.

By PALPATION we may sometimes (but not always) distinguish the head of the child, and perhaps tell to which side its back is turned. When making the examination let the patient lie on her back, make gentle pressure when the pains are off and the abdomen is relaxed; press the ends of your fingers above the body of the pubis; by pressing downwards you may perhaps feel the head if it has descended into the pelvis. You will need to press the abdomen carefully all over to ascertain if there are tumors, and also to ascertain if the body or some other part presents at the cervix uteri.

If *auscultation* is used we may determine positively the position of the fœtus by observing just where the sounds of the fœtal heart may be most plainly heard.

The VAGINAL TOUCH is the usual mode of determining whether there is an unfavorable presentation of the child, as well as whether there is deformity of the pelvis, tumors in the vagina, ulcerations, &c.

When the head presents in the commencement of labor, if the fundus of the uterus is not too much inclined forwards, and there is no deformity of the pelvis, the os may easily be reached, and the hard round head of the child be felt without difficulty. Should a hard presenting part not be felt either through the dilated os or the walls of the uterus, it may be because there is a breech or body presentation, or there may be twins, or there may be an

unusual amount of water in the uterus, or the child may have hydrocephalus—in either of these cases it might not be possible to decide immediately about the presentation and position.

FACE PRESENTATIONS cannot be detected very early in the labor. Before the membranes are ruptured the head is high and difficult of access. When it is reached the forehead is first encountered, afterwards we may feel the nose and mouth. It is unfortunate for us that we cannot usually distinguish a face presentation in the early stage of labor. It is not so important that we make an early diagnosis of presentation of the breech, as there is no danger to the mother involved in the latter.

PRESENTATION OF THE BODY should always be detected early, at least as soon as the membranes are ruptured. The abdomen of the mother is much longer in the transverse diameter than is usual, and the head of the child may sometimes be felt in the iliac fossa. The form of the mother's abdomen is irregular as the fœtus lies curved on itself. When we are able to touch the fœtus, if the shoulder presents, we first feel a small bony projection, the acromion point of the shoulder; then other points, including the acute angle of the shoulder blade. We should ascertain as soon as possible on which side the head lies, and also the posterior plane of the child.

Sometimes the hand comes down in the vagina or even appears at the vulva; if it does we may know by that (and by slipping the finger of our hand up into the axillary space) just how the child lies. If the back of the child's hand is turned towards the mother's right thigh the head is to the right, and if to the left thigh, to the left. The little finger being towards the coccyx indicates that the child's back is towards the mother's loins, and

the same finger being towards the pubis is evidence that this is in front. It is quite important that these points should be noted.

There are various causes of tedious, difficult and obstructed labor, and in each case we are obliged to depend principally upon the touch for diagnosis. In some instances the difficulty will be obvious as soon as we attempt to make an examination. A NARROW and UNDILATABLE VAGINA will be easily recognized, but this will rarely be found a serious obstacle to the passage of the child; as the labor proceeds the vagina seems naturally to dilate and to be more softened and relaxed.

Cases have been reported where there was a *scirrhus tumor* or cancer connected with the neck of the uterus, even during labor; happily such cases are rare. The scirrhus would be felt hard and unyielding. A tumor of any kind connected with the os uteri, the vagina or the rectum may obstruct the descent of the child's head more or less according to its size and mobility. Of course they can be detected.

A VAGINAL CYSTOCLE ought always to be rectified. It sometimes happens that the bladder is caught by the head of the child in its descent into the cavity of the pelvis and pushed before it, and it can be seen as a soft red tumor between the vulva. The finger can be passed posterior to it, but not anterior, and the catheter cannot be passed in the usual direction.

A few cases are on record where a *stone* (calculus) in the bladder was pushed down before the fœtal head. A careful examination will show that the tumor is covered by the bladder; its hardness will indicate its nature.

A COLLECTION OF HARDENED FECES IN THE RECTUM is

detected without difficulty. It will be of an irregular form, hard and inelastic.

Swelling of the soft parts may cause obstruction. If the child's head is detained for a long time pressing upon the brim of the pelvis, it may obstruct the circulation and diminish the capacity of the passage. In such cases there is unusual heat and dryness in the parts.

When a nurse or midwife makes an examination by touching, she needs to continue it through several pains, and to repeat it again soon to know if there is any progress to the labor. If the progress is very slow this may be from various causes, some of which I will now simply name. It may be because the uterus is very much distended, and this renders the pains inefficient; there may be partial and irregular contractions of the uterus, weakness of constitution, fever or local inflammation, a want of irritability in the constitution, a deformity of the pelvis and spine, or doubts and fears on the part of the patient may diminish the action of the uterus. The labor may be slow because it is the first one, or because the membranes were ruptured too early, or because the woman is advanced in years at the time of having her first confinement. The uterus may be pitched over obliquely, there may be extreme rigidity of the os uteri, extreme rigidity of the soft parts of the mother, a contracted or small pelvis, the head of the child may be large and ossified so as to be unyielding. One or both arms may come down by the side of the head of the child; on the part of the mother there may be a distended bladder from inability to void the urine, there may be cicatrices (scars) or adhesions of the vagina, and in some cases it has happened that an enlarged ovary has dropped down into the pelvis, or a portion of intestine containing scybula or hardened

feces obstructs the passage, or the os uteri is very minute, or imperforate, or totally absent.

Some of these cases may demand the interference of art in the first stage of labor, but delay at that time involves very little danger ; as a rule neither the mother nor child is in danger (except when there is hemorrhage or convulsions) on account of labor before the membranes are broken. If the nurse can ascertain the cause of the delay and finds that time is what is especially needed, she must exercise patience herself and encourage her patient to do so.

It is hardly possible to predict beforehand in what cases convulsions will occur, but if there is much headache in the commencement of labor and if there has been considerable albumen in the urine of the patient, we have especial reason to apprehend trouble of that kind.

The history of the case is important in forming an opinion as to whether there may be severe hemorrhage. Some women are naturally predisposed to flowing.

PART IV.

SKILLED NURSING AND MIDWIFERY.

CHAPTER I.

PRELIMINARY INSTRUCTION TO THE NURSE MIDWIFE.

It is my design in giving the following instructions to prepare the student of this work to be a skilled or skillful nurse, not to be simply a midwife; to act in conjunction with, not in opposition to, physicians; to conform to, and not to violate laws which regulate the practice of medicine; to officiate in cases of easy, natural labor sometimes, but never in cases requiring the use of instruments; to be prepared to act in emergencies until the doctor can come and take the case; not to treat the case when the services of a physician can be obtained and is desired or needed; in short to act intelligently in all cases in which women now act perhaps blindly, hurriedly and ignorantly.

The present state of feeling among our people, and especially among the medical profession in this country, would not sanction an effort to educate women solely as midwives.

But there is a general feeling or sentiment that every young lady ought to have that kind of education which may render her useful; that she should be prepared in some way to minister to the desires, wants and needs of

her fellow creatures, and that some part of that knowledge or skill should be of that kind which would be available if these persons were thrown on their own resources; hence I would have some of you to be, not only nurses of the sick, but skilled nurses of lying-in women. And should some young lady after studying this work, decide to pursue the study of medicine thoroughly and become a physician, the knowledge here obtained would be available.

PRELIMINARY INSTRUCTIONS.

1. Do not stop short of a thorough knowledge of this book, every part of it.

2. Endeavor here to get a knowledge of midwifery that will qualify you to attend ordinary cases of *natural* labor, and enable you sometimes to give medicine when needed, and when there are no physicians in attendance; but understand that there are many times when the only proper thing for you to do is to send for a physician or experienced accoucheur.

3. Do not hesitate to seek knowledge and experience and instruction from any source where you think that you can obtain it. Physicians will be willing to aid you, and I think the time is coming when he will regard the educated nurse as his friend, and not as his natural enemy.

4. I do not think it best that you should call yourself a midwife, because if you do it will excite misapprehension and prejudice. Seek in every way to be skillful as a nurse, and seek to have a corresponding reputation.

5. Do not undervalue your position, if you have the wisdom and courage and perseverence necessary to prepare you to minister to your sex in their time of greatest suffering and trial. Do not doubt that your mission is an

honorable one. And even if you do not minister very often to the sick in labor, except as the right arm of the medical man, you may help to raise the standard qualifications of the nurses of our land. Do not suppose that I am complaining harshly of our present supply of nurses. Women have shown a wonderful adaptability to the needs and exigencies of their suffering friends in nursing and caring for them. And it is because they are so ready to receive instruction that I endeavor here to furnish good instruction for them.

6. Do not suppose that your knowledge obtained by study is sufficient to enable you to act as midwife (except in an emergency), unless your studies are supplemented by observation, as mother nurse, &c.

7. Do not be unwilling to minister to women who are poor. The young physician is willing to do something in this way to gain experience and for the sake of humanity, and this will be your opportunity to gain experience without coming in competition with rivals.

8. The nurse as well as the medical man, must study the phenomena of labor at the bedside of the patient. No one can be qualified by mere reading for the duties of a midwife, and no woman that is diligent and observing can attend a case of labor without some addition to her knowledge.

INSTRUCTION TO THE NURSE MIDWIFE.

When I use the term nurse midwife I mean a nurse that has some knowledge of midwifery, that can be called to attend to women near the time that she expects to be confined, and that can remain in attendance for two weeks or more if it is desired or necessary. Sometimes a woman would, if possible, have a skilled nurse with her a

week or more before confinement, especially because she would thereby avoid sending for the physician unnecessarily, and because she would be less likely to detain him for a long period of time.

If the nurse midwife understands her business she will in some cases do better for the woman than a physician in the commencment of labor. For instance, suppose that a doctor is called a distance of five miles and away from his home and his other patients, and when he examines the case the pains seem to be of the character of false labor pains. He knows that the real good of the patient might require that she should take an opiate, but the doctor would be unwilling to give it lest it might protract a real labor, and subject all parties to the inconveniences of a prolonged labor including unnecessary visits of the doctor. The nurse who can remain with the patient, if the labor should not be concluded in several days, would be more likely to do just what the good of the woman requires. And in such a case a skilled nurse would be peculiarly acceptable to a physician if he chanced to be called, because he would be much more at liberty to leave his patient if it seemed necessary to do so.

When a nurse midwife is called to attend a case, she should carry with her besides disinfectants, a male catheter, some laudanum or other opiate, quinine, and extract ergot, in order to be prepared for emergencies. Ordinary cases may require no medicine, but some cases do.

CHAPTER II.

THE NATURAL LABOR.

A NATURAL LABOR has been described as one "in which the head presents, and descends regularly into the pelvis; where the progress is uncomplicated, and concluded by the natural powers within twenty-four hours, (each stage being of due proportion), with safety to the mother and child, and in which the placenta is expelled in due time."

A skillful, careful examination in the commencement of labor will enable you perhaps to decide whether the labor will be natural or otherwise. But it may be your duty first to know if your patient is in ordinary health, or if she have any fever or organic disease, and you should enquire about the bodily functions generally, the condition of the pulse, skin, &c. Before making a digital examination you should notice the character of the pains, their frequency, force and regularity, the amount of voluntary effort, the character of the outcry, &c. From these enquiries you probably will be able to decide whether she is suffering from real labor, or false pains.

She will, however, probably not object to a digital examination and your opinion will be founded principally upon that. The modern practice is to wash the hands in antiseptic soap or some solution before making an examination.

We are directed by most writers to have the patient lie upon her left side near the edge of the bed when we examine her. The fore finger of the right hand (sometimes

the left) after being well oiled or soaped should be passed along the perineum into the vaginal orifice, and is to be pressed upward and backward towards the promontory of the sacrum until the os uteri or the presenting part is found. Sometimes this is not reached without an effort. When reached endeavor to find the fœtal head or to determine what is the presenting part—feel sufficiently to distinguish the lips of the os uteri from the presenting portion of the fœtus. Do not be hasty in making the examination; wait till you examine sufficiently to know if the child is forced down; observe both during the time of a pain and during an interval, and observe if the pains dilate the os. Sometimes during a natural labor there may be a severe pain, and when the pain is hardest, the os contracts. By waiting to take a number of pains you will learn if there is real progress. When examining, note the calibre, heat and moisture of the vagina; the general condition of the cervix; the dilatability of the os uteri and the actual dilatation by the bag of waters or the fœtal head during a pain. If the head presents you can best learn the particular position when the pain is off; and after the membranes are ruptured you can decide better than previously. Ordinarily the sagittal suture can be felt, and perhaps both fontanelles, but you must not be discouraged at all if you cannot determine the exact position. Doctors ordinarily do not deem it necessary.

If you can decide that it is a head presentation and that the woman is undoubtedly in labor, you may probably decide that the labor will be natural, and you may properly tell the friends so, adding perhaps, that it will depend upon the character of the ensuing pains whether the labor will be protracted or short.

Various circumstances of which you are possibly not yet cognizant may make your case of labor a tedious or difficult one. You have decided, perhaps, that there is no obstruction to the passage of the child, no deformity of the pelvis, scirrhus or other tumors in the vagina, no cystocele, no prolapsed ovary, and that there is not a rigid perineum or imperforate vagina. If there is, you need to have a medical man present, but should none be obtained you will need to repeat your examination from time to time. Observe if each pain presses down the bag of waters and dilates the mouth of the womb, and if the soft parts are in a relaxed state, and if there is a show. Even if the appearances are thus promising, the labor may be slow and tedious from various causes.

1. Possibly hardened feces may be in the rectum; if they are you may be assured of the fact when you make a digital examination, as they seem like tumors posterior to the vagina. The remedies are physic, enemas, rest—possibly opium.

2. Inefficient pains may be due to a bladder distended with urine. When this is suspected we should observe whether there is abdominal swelling (not tympanitic) low down; pain on pressure which gives rise to a desire to urinate; a constant desire to pass water though the patient has just performed the act, or a dribbling of water from the parts. If the bladder cannot otherwise be relieved a catheter should be used, and as a precaution to avoid wetting the bedclothes it is well to have a catheter made long enough by affixing a piece of India rubber tubing to the end of it to reach a vessel at the side of the bed. Never use force in passing a catheter in. It is very seldom that it is necessary to use it at all during labor.

3. If there is a hernial protrusion of the bowel, or a

calculus of the bladder falling down in the passage you will probably have a medical man to officiate. But I may say that if there is need of your doing anything to replace them, or if it is necessary to return a prolapsed bladder, you can best do it when your patient is in the knee-chest position.

4. The lack of expulsive power is sometimes due to the want of sleep. If the first stage, that of dilatation, is prolonged the subsequent uterine contractions seem to want efficiency. In such cases if the patient can have a dose of opium or morphine administered to induce sleep it acts favorably. Where there is nervous excitement particularly, the efficiency of the pains are increased if we give opium and first procure a period of rest.

5. The uterus may be greatly distended and its expulsory power thereby weakened. In such cases there may be a suspension of the action of the uterus for several hours although the labor before that had made considerable progress. If pains of labor are feeble or slow or suspended, no harm can come to the mother or child (in such cases) except that the mother is compelled to bear them for a longer time. The only remedy that I would suggest is that the distention be relieved by the rupture of the membranes and discharge of water. If more efficient pains did not come on, then I would give a dose of morphine, which would either increase the pains, or give a period of rest.

6. Sometimes there are vehement and cramp-like pains in the abdomen producing no effect that is good and adequate, caused by partial irregular or spasmodic contractions of the uterus—usually what are called hour-glass contractions. If the bowels have been evacuated and there is no improvement, I would give one-fourth grain of

morphine which will enable the woman to go through her labor more easily, and perhaps quite as quickly.

7. It is generally believed that a cord being very short and being around the neck of the child may protract a labor. I do not deny that this may possibly occur, and when the child's head is born, and I find that there is a coil of the funis on its neck I loosen it.

8. Weakness of the constitution when the general health of the woman is below the natural proper standard may be a cause why the uterine contractions are not severe. But in such cases the parts are not rigid, and nothing more than a dose of four or five grains of quinine is needed to make the pains effectual.

9. A want of irritability in the constitution frequently observed in fat and inactive women, or in those who are exceedingly timid, will sometimes be a cause of slow and lingering labor. Fear often lessens the energy of all the powers of the constitution, and diminishes or wholly suppresses for a time the action of all the parts concerned in parturition. Attendants should endeavor to inspire such patients with activity and resolution, and remove all fear from their minds. These cases are not dangerous but I have often found it necessary in this kind of cases to apply forceps. The skilled nurse might perhaps give eight or ten grains of quinine, if no physician has charge of the case.

10. Every woman is expected to suffer greater pain and to have a more tedious labor with her first child, and if a woman be advanced in age at the time of having her first child the difficulty attending her labor may be somewhat greater. A longer time may be required for the completion of the labor than in ordinary cases, but I do not advise giving any medicine unless it is perhaps a dose

of quinine. There may be a little more need of assistance by instruments, &c.

11. An oblique position of the os uteri, it being projected on one side or the other of the center of the superior strait, or so far backwards that it cannot be felt for several hours after labor has begun, is a cause of delay. The presenting part may be found pressing against the walls of the pelvis at one point, instead of keeping its course in the center of the pelvic cavity. You should endeavor to place the patient so as to remedy this condition. When the presenting part is found to one side, it will be found that the fundus of the womb is lying to the opposite side; this should be remedied by a proper support of the abdominal tumor or by holding it up by the hands. For example, if the os uteri be projected to the left side, she ought to rest on the right side and have a pillow placed under her body; some physicians would prefer that she lay on the left side, but without the pillow under her.

12. Extreme rigidity of the os uteri is a cause of tedious and very painful labors. It sometimes happens that the os is dilatable, but the pains are not sufficiently expulsive. Perhaps at the same time the os is found far back towards the promontory of the sacrum, and the head appears not to be driven directly into the os so as to aid in its dilatation, but rather presses against the anterior wall of the cervix. In such a case the end of the finger can be hooked into the anterior lip of the os uteri so as to aid in the dilatation, and also to help correct the displacement of the os. In other cases we may help dilate the os by a firm and gentle sweep of the finger around the advancing part of the child's head within the os. But we cannot always do this, because we may be afraid of

rupturing the membranes prematurely. If the membranes have been already ruptured, we may act more boldly, but we must never make any great efforts to dilate it artificially lest we excite inflammation. In many cases it is best to give ¼ gr. of morphine, and inform the suffering woman that she cannot possibly get through her labor in a short time, but if you can give her an hours' rest, the os, which is rigid, will be more relaxed and pains more effectual.

13. In first labors there is sometimes unusual rigidity of the soft parts, which are external. Where the perineum is rigid it may require several hours continuance of the pains before it is sufficiently stretched to allow the head of the child to pass. But the difficulty can hardly be relieved by our interposition. We should generally wait the due time, as we must also if the os coccygis is anchylosed with the sacrum.

14. The head of the child may be comparatively large when the pelvis is of the ordinary form and size. This may be a cause of delay though it may perhaps cause nothing more than prolonged, tedious labor. In such cases you have time to send for a doctor, even if he lives at a distance. After the woman has been a long time in labor he will think it best to apply the forceps.

You will be importuned in cases of slow and tedious labor to administer ergot, but any one who knows the action of the drug would never give it in any of the following cases: 1. Where the os is not well dilated. 2. When any mechanical obstacle exists to the passage of the child, or when there is a tendency to convulsions, and *you* should never give ergot except for hemorrhage; and when you have much reason to fear it, you may in such cases give one or two twenty drop doses of the fluid extract very

near the termination of labor. Quinine may be given as an oxytocic with safety. Morphine is liable to render the pains weak for a time, but it often increases their efficiency.

I will now enumerate your duties when you act as accoucheur.

1. Ascertain if the lady is really in labor. Make a digital examination. If the os is high up so as to be reached with difficulty, slightly patulous and rigid, and the pains are felt in front, there is reason to believe that the labor has not yet commenced—that she only has false labor pains. At this time attend to the bowels; give perhaps paregoric or morphine to relieve her of what is to her useless and exhausting agony, and enjoin rest. You may at this time properly give her an enema containing $\frac{1}{4}$ of a grain of morphine or fifteen grains of chloral dissolved in gruel or starch or mucilage.

2. When you make an examination and find that the pains are efficient in producing a dilatation of the os uteri, that the parts are soft and relaxed, if there is a secretion called the show, if there is a favorable presentation, and the labor is making some progress, the patient should be told of all that is favorable in the case.

3. Be careful in making early examinations to, first, if possible, reach the os with the finger. When your finger presses against the cervix it will hurt her considerably more than it will when it presses against the presenting part of the child. 2. Avoid rupturing the membranes. 3. Notice if there is anything observable to hinder the progress of the labor. 4. Note any progress of the labor.

4. If everything is favorable, assure the patient of the fact; if you have doubts and fears upon some point, you need not express all your fear, but do not delay to send for a physician.

5. You may in the early stage of labor, permit the patient to move about as she wishes, and she may rest on the sofa when tired. She may have her usual diet, but not any stimulants.

6. From time to time make an examination. If the os is dilatable you need not fear that the membranes may then be ruptured. Learn as fully as possible the presentation and position, and if you press your finger against the child's head you may thereby reinforce weak pains.

7. Do not annoy the patient by pressing upon the back or anywhere during a pain if she requests you not to, but when she does not object you can make such pressure as will reinforce the action of the abdominal muscles. When she is lying on her back with her shoulders elevated so that she is in an almost vertical position, you can stand beside her with your back towards her head, and make the necessary palpation by pressing with your hands on her abdomen, one of them on each side. Do this only when there is no tenderness, when the os is dilated, when there is a normal pelvic canal and a low position of the presenting part. Seek in thus pressing to move the uterus to the axis of the pelvic brim, then with the palms of your hands to the sides or fundus of the uterus press gradually downward, increasing the pressure for six or eight seconds, and then gradually diminishing. You may repeat this as often as she has a pain, and with an increasing force, and if the patient assents, you may make such pressure unremitting.

8. When the os uteri is fully dilated or soft and dilatable, the membranes may be broken by pressing with the end of your finger against it, or if this does not suffice, the finger nail previously nicked may open it.

9. When free hemorrhage occurs prior to delivery, it

may depend upon placenta previa; that is, upon the placenta being attached very near or over the mouth of the womb; in such a case obtain a physician to take charge of the case if possible. You may yourself give half a teaspoonful of extract of ergot in the emergency.

10. During the progress of the labor you must always remember that the unassisted, natural powers are in most instances fully sufficient to bring the labor to a safe termination, and whatever you do should be of the kind that is not harmful. The important thing for the attendants to possess is gentleness and patience, and it is a good thing for the patient if she can be kept tranquil and cheerful.

11. A little light food may be offered the patient at any time during labor.

12. During the first stage of labor the patient must not strain or bear down to the pains, but it is my practice when I examine my patient and find that the head has not yet entered the pelvis, at the same time that the touch stimulates the uterus to contract, I direct the patient to bear down during each pain. After the head is fully engaged in the bones, no stimulus to pain is needed; however, as the bearing down pains come on, she should be advised to strain or press down.

13. Towards the last, when she is in great pain, if she be inclined to cry out, let her do so; never reprove her.

14. I approve of giving chloroform in some cases, but I do not advise the skilled nurse to give it except when a physician is present to direct its use.

15. During the latter part of the labor the only assistance you can render the woman is to support the back, and to give her something to pull upon if she is so inclined. A sheet tied to the foot of the bed may be useful

for this purpose. At the very last, bearing down efforts should be discouraged.

16. When the head is about to be expelled we always fear there may be slight or severe lacerations of the perineum. Do not in any way hasten the expulsion, even if there should be a number of pains in which a part of the head presents externally during the pain, and then recedes when the pain goes off. I have not always been able to prevent laceration, but the following directions are the best that I can give: Endeavor to have the patient extend her legs, and do not have her knees drawn up close to the body at the last. When the perineum is put on the stretch, place the thumb and forefinger of the right hand on either side of the perineum, and press so as to aid the stretching or distention. When the perineum is distended and protruding you may cover the hand with a soft napkin and apply it across the perineum, also by the sides of the vulva, and make firm, moderate pressure during the pain. Endeavor to have the pressure equable around the head of the child.

17. When the head is expelled an attendant should make steady gentle pressure upon the uterus and follow it down, keeping her hand firmly upon it for several minutes, perhaps for half an hour, or if you have given a little attention to the child, you yourself may put your hand on the contracted uterus and firmly knead it for ten minutes.

18. It is not necessary to extract the body immediately after the expulsion of the head. It is better to wait three or four minutes for the return of a pain before making any traction.

19. Although a little traction can be made on the head, it is a better way while an attendant presses on the uterus, and while you hold on to the child's head with one

hand, insert a finger of the other hand into the axilla, (under the child's arm) and gently extract the body.

20. The child may be born apparently asphyxiated—its face swollen—and of a dark lived color, and at first make only feeble and gasping efforts at respiration; if there is the least beating of the heart can be perceived, there is fair hopes of its recovery. The cord should at once be tied and the child removed from the mother. If one or two slaps on its body does not make it cry, try immediately artificial respiration by the Sylvester method perhaps, not omitting at first and afterwards to throw a little cold water on its body. If these efforts fail I would try to induce respiration by placing my hand over its nostrils and blowing into its mouth, and immediately afterwards compressing its lungs.

21. As soon as the child cries, as it most generally will as soon as it is born, proceed to tie and separate the cord. Tie the cord tight, so that it is thoroughly compressed and the vessels obliterated, applying the ligature about one and a half inches from the child, and then cut the cord one inch further from the child. The child can be rolled in flannel and removed, and you can attend to the mother and to the removal of the afterbirth.

22. In only a very few cases I have had post partem hemorrhage or adherent placenta to trouble me, and I commend to you the method that I have used for the removal of the placenta. I do not tie the cord until circulation has ceased in it. I then sever it, and usually two or three ounces of blood may flow from it. This I suffer to run into some vessel to avoid soiling the bed uselessly, and then wind the cord around my right hand so that I can hold it. If I cannot have an attendant to make proper pressure on the uterus, I immediately endeavor to

compress it as much as I possibly can with my left hand, but I make very little traction on the cord. I usually instruct some one else to make strong and firm pressure upon the uterus, and I pass two fingers of one hand into the vagina, and learn thereby when the placenta descends, and if necessary assist in its removal. Although we should never hurry in removing the afterbirth, I believe that it always is easily removed if we make the effort very soon after the child is born, and if it is necessary for you to pass your hand into the uterus you can do so then better than at any other time. Judging from my own experience in cases of retained placenta, if you pass your hand along the cord into the uterus, you will find that an hour-glass contraction retains the afterbirth (whether adherent or not) in the fundus. You will have to press your fingers through the constricted portion and grasp it, and you can remove it steadily and slowly, but *not* stopping to give it "one or two turns in the vagina."

23. Post partem hemorrhage is liable to occur; when it does, obtain a physician as soon as you can, but some things must be done immediately. 1. Some one must grasp and compress the womb continually. 2. Remove the pillows and raise the foot of the bed so that the patient's body lies higher than her head. 3. If you have it, give a small teaspoonful of extract of ergot, or twenty drops spirits turpentine or (F. 96.) 4. Examine to know if possible, the source of the hemorrhage; if it comes from the vagina or perineum where there is laceration, it is not very dangerous. Inject hot water of the temperature of 115° into the uterus, and apply a dry cotton cloth, heated as hot as possible, to the abdomen externally. 5. Before using the injections remove all clots from the vagina. 6. Quinine and stimulants may be

exhibited if there is sinking, and ice may be applied to the abdomen and to the internal surface of the uterus, if the bleeding continues. I will here direct another thing which is very effectual, and which might be used at first in preference to anything else. 7. After removing the clots take a handkerchief or piece of muslin, saturated with vinegar, in your hand, pass it entirely into the uterus, and let it remain there 15 or 20 minutes, and your hand also. Your hand will compress the open blood vessels, and keep a clot in the mouth of them, and the vinegar will act as the best astringent that can be used. In one case of violent flooding I simply *held my hand still* in the uterus for five minutes, and the flow ceased. After the hemorrhage subsides you must be careful not to raise the patient's head above the level suddenly; her life may be put in jeopardy by suddenly raising her so that she sits up.

AFTER PAINS are very seldom severe in primapara cases, and they are less likely to be severe if the proper manipulations have compelled the womb to close completely, expelling all clots, &c. But sometimes there is a peculiar irritability or neuralgic condition of the womb which gives rise to excruciating pains. Ordinarily you may use Tully's powder. (F. 123, 93, 95, 107.)

RETENTION OF URINE in some cases necessitates repeated visits of the physician, and he will appreciate a nurse who can introduce the catheter. If the patient cannot at first void the urine, perhaps the application of a hot wet sponge over the pubis may enable her to do so. But it may be necessary to introduce a catheter two or three times a day until she regains her power over her bladder, or until the swelling of the urethra subsides.

It is well for the nurse to know that owing to the dis-

tensible state of the abdominal parietes, the patient will lay twelve or fourteen hours, perhaps, after the child is born, without manifesting a desire to void the urine, though her bladder may be very full, and you should remind her of the necessity of passing the water, lest it produce cystitis. In some instances the urethra and neck of the bladder are extremely irritable, causing strangury, and there may be some difficulty in passing the catheter, but the urine must be evacuated, and afterwards it may be necessary to use ergot, laxatives, opiates and fomentations. (F. 125, 126, 162.)

CHAPTER III.

CONVALESCENCE.

VARIATIONS FROM ORDINARY CONVALESCENCE will, under ordinary circumstances, receive necessary attention from the physician, but the skilled nurse should know as much about them as possible, and I here make a brief reference to some of them.

The NERVOUS SHOCK, caused by the last pains of labor, in some cases is very severe. This is indicated not only by the exhaustion, but by the countenance which is expressive of suffering, anxiety and oppression. The pulse may be very slow or unusually rapid, the breathing may be panting. Opium is the best remedy, and this may be given in small doses repeated, or a teaspoonful of paregoric may be given, also aromatic ammonia, and 3 or 4 drops of spirits of camphor.

The STATE OF THE PULSE after a natural labor soon comes down to near the ordinary standard ; if it remains

above a hundred it is because there is some special cause. It will be quick if there are very hard afterpains, a tendency to flooding, diarrhœa or disturbance of the stomach, and it is quickened also when lactation commences.

The LOCHIAL DISCHARGE ordinarily continues about three weeks, at first of pure blood mixed with coagula, and if good uterine contraction has not been secured, coagula may be expelled for several days after the delivery. Sometimes there is a SUDDEN DECREASE OF THE LOCHIA, perhaps on the fifth and sixth day, and at the same time an increased bulk of the womb, and increased frequency of the pulse. Apply hot fomentations to the abdomen, and probably some clots will be expelled, but at the same time give purgative enemata; and if there is abdominal tenderness give an aromatic purgative and laudanum. (F. 108, 122). There are remarkable differences in the QUANTITY, QUALITY AND ODOR OF THE LOCHIA without any morbid affection of the uterus or vagina. But when the lochia are acrid, the vagina, labia and external parts become excoriated, and smarting or itching is caused. Try extreme cleanliness, frequent bathing, lead lotions, black wash, vaginal injections of warm water, and F. 178, 179.

If the discharge ceases a few hours after birth, or if it continues the usual time, but in very small quantity, or if it is prolonged beyond the usual period, or if it is excessive at first, and if at the same time all the other symptoms are favorable, there is not occasion for much medicine, though it may be necessary to give the patient a better diet, possibly some tonics. (F. 174, 175). It sometimes occurs that the lochia is suddenly discharged in double quantity after the patient is permitted to sit up or walk about. In such cases enjoin extra rest.

If the red discharge continues longer than usual, or if it return after yellow or greenish discharges, you should be on your guard against HEMORRHAGE. Enjoin rest in a horizontal position under light clothing.

Occasionally the LOCHIA HAVE A VERY FETID ODOR. It is not very rare to observe a very disagreeable odor in the lochia without any bad results, but this often indicates the retention and putrefaction of coagula or a small portion of the placenta or membranes. Syringe out the vagina freely night and morning with Labaraques solution or some other antiseptic wash, (F. 153) and once or twice a day with warm milk and water. A weak solution of carbolic acid 1 in 50 may be used, and it may be proper to throw it into the uterus.

The SECRETION OF MILK generally becomes established in about forty-eight hours, and very often on the third day the breasts become turgid, hot and painful. There may, or may not, be some general disturbance, fever, chills, &c., but if there is it will usually be relieved after the milk is drawn out. It is customary on the morning of the third day to secure an action of the bowels, and this generally allays the vascular action if it is excessive. But very trivial causes may set up INFLAMMATION OF THE BREAST, and this is always liable to end in suppuration, which may be long continued and distressing.

The MAMMARY INFLAMMATION may follow exposure to cold, a blow or other injury on the breast, some temporary engorgement of the lacteal tubes, or sudden and depressing mental emotions, and it often follows from fissures and erosions of the nipples. To prevent the formation of an abscess, endeavor to remove the engorgement of the lacteal ducts by gentle hand friction with oil or F. 209, 202. Moderate the inflammation by giving five drops of

the extract Phytolacca decandra (Poke root) every two hours—give saline cathartics, minute doses of aconite, and perhaps a large dose of quinine. Keep the patient in bed and have the affected breast supported by a suspensory bandage. Apply hot fomentations containing a solution of carbolic acid, or poultices containing it, and the breasts may be smeared with belladonna extract rubbed down with glycerine ; or belladonna liniment or ointment may be applied (F. 234). Belladonna plasters or diachalon plasters may be useful. Give 15 grains bromide potassa.

WHEN PUS HAS FORMED notwithstanding efforts made to cure the inflammation, as soon as it is near the surface so that it can be detected by the fluctuation, the abscess should be opened. During the last few years careful surgeons have been unwilling to make any incision or lance even an ordinary abscess without employing some antiseptic method, such perhaps as the following:

The patient's skin where the incision is to be made, is first to be washed in 1 to 1000 bichloride of mercury solution—hands and instruments employed in the work must touch nothing that is not sterilized ; hands must be washed in the same solution before operating—sponges that are used must be cleaned and stored in a 1 to 20 carbolic acid solution, and instruments must be soaked in the same for 15 minutes before being used, and some apply a large wad of bichloride of cotton or gauze to catch the exuded pus.

The following is Lister's antiseptic method which he first directed, to prevent the introduction of air containing living germs :

"A solution of one part of chrystalized carbolic acid in four parts of boiled linseed oil having been

prepared, a piece of rag from four to six inches square is dipped into the oily mixture and laid upon the skin where the incision is to be made. The lower edge of the rag being then raised a scalpel or bistoury dipped in the oil is plunged into the abscess and an opening about three-quarters of an inch in length is made, and the instant the knife is withdrawn the rag is dropped upon the skin as an antiseptic curtain, beneath which the pus flows out into a vessel placed to receive it, and all the pus should be pressed out as near as may be. For a dressing afterward Playfair recommends the following: About six teaspoonfuls of the above mentioned solution of carbolic acid in linseed oil is mixed up with common whiting to the consistence of firm paste; this is spread upon a piece of tin foil about six inches square, so as to form a layer about a quarter of an inch thick; the tin-foil thus spread with putty is placed upon the skin, so that the middle of it corresponds to the position of the incision, the antiseptic rag used in making the incision being removed the instant before. The tin-foil is then fixed securely by adhesive straps, the lower edge being left free for the escape of the discharge into a folded towel placed over it, and secured by a bandage. The dressing is changed once in twenty-four hours, as a general rule, and must be methodically done. A second similar piece of tinfoil having been spread with the putty, a piece of rag is dipped in the oily solution and placed on the incision the moment the first tin is removed. This prevents mischief during the cleaning of the skin with a dry cloth, and pressing out the discharge from the cavity.

The same author directs methodical strapping of the breast with adhesive plaster, in cases of long continued suppuration, and he adds that "much attention must be paid to general treatment, and abundance of nourishing food, appropriate stimulants and such medicine as iron and quinine will be indicated."

I give on the authority of another the following as good treatment for SORE NIPPLES:

"1. Keep everything that will irritate, whether cloth-

ing or medicine, away from the nipple, and have the excess of milk drawn from the breast in the easiest way possible. 2. Keep the excoriated nipple thickly covered with subnitrate of bismuth. 3. When the nipples are cracked at the base keep the cracks filled with bismuth, and put on a round piece of adhesive plaster starred in the centre, and just large enough to slip over the nipple and extend around its base an inch or more every way. When this is loosened it must be reapplied." (F. 231, 243).

There are certain accidents of parturition so grave in their nature, and attended by symptoms so alarming and urgent that no nurse would attempt to treat the patient except under the direction of a physician. I only refer to them because it is believed that some of these serious cases might have been prevented by early proper action on the part of the midwife or other attendant.

INVERSION OF THE UTERUS sometimes occurs, though but rarely. If it is in the practice of a midwife, and if she be at the time pulling on the cord, that will be assigned as the cause of the accident. Inversion consists essentially in the enlarged and empty uterus being either partially or entirely turned inside out. The immediate symptoms are those of shock or collapse—fainting, small, rapid and feeble pulse, possibly convulsions, or vomiting, and a cold, clammy skin. The countenance becomes deadly pale, the voice weak, and other symptoms indicates sudden exhaustion or sinking. In cases of partial inversion the symptoms are not so striking. Hemorrhage to a large amount, frequently but not always occurs. In more than half the cases no mechanical cause can be traced, but as it is sometimes attributed to pulling on the cord, to pressure with the hand on the fundus, and also to the patient straining forcibly, these combined causes should be avoided. When the symptoms named are pres-

ent, you can give the patient some aromatic ammonia or other stimulant; always obtain a physician as soon as possible.

PUERPERAL MANIA is nearly always preceded by restlessness, want of sleep, and other premonitary symptoms. When the mania first comes on there is usually causeless dislike to those around her, and as the child may be the object of suspicion, the nurse must be extremely careful that the patient does not have an opportunity to seriously injure it. The course of treatment must be mainly directed to the maintenance of the strength of the patient, and the two things most needful are a sufficient quantity of suitable food and sleep. Possibly your efforts in this direction before the disease is fully developed, may ward off the disease.

PUERPERAL SEPTICEMIA was formerly called puerperal fever; as its nature is now better understood than formerly, we hope to do more than was formerly done to prevent it. This fever is now very generally believed to be produced by the absorption of septic matter into the system, through some tear or laceration in the generative tract such as exists after labor.

This septic matter may be from within the patient such as coagula, or membrane, or placenta partly decomposed; or from without as might be on the hands of physician and nurse, or in the air from cases of erysipelas, &c., or in some way from puerperal patients.

The notion that puerperal fever and septicemia is produced by BACTERIA has now become an established doctrine, and has given rise to a rational treatment based thereon, especially for their prevention.

As prophylactic means may be mentioned, the use of a carbolic solution 1 in 30 which the practitioner or nurse

applies before touching any case, the use of carbolized oil 1 in 8 for lubricating the fingers, catheter, forceps, &c.; syringing out the vagina with diluted Condy's fluid, rigid attention to cleanliness in napkins, &c. The nurse should use antiseptics to only a very limited extent without the advice of a physician.

CHAPTER IV.

CARE OF INFANT CHILDREN.

Infants sometimes require treatment for ailments either slight or severe when the advice of a physician cannot be obtained.

The NAVAL is sometimes a little sore after the naval string comes away. It may be dressed by putting a little simple cerate or vaseline or carbolized cosmoline on lint or a linen rag, and applying it to the part affected every morning, and a bread poultice every night until it is quite healed.

A RUPTURE OF THE NAVAL is sometimes caused by much crying, and it may be occasioned by the nurse pulling on the cord to remove it before it will readily separate from the infant's body.

The best treatment is a piece of adhesive plaster as large as the top of a tumbler, with a properly adjusted pad made of several folds of muslin fastened on the plaster, which will keep the bowels from protruding. The bandage or belly band can be put on over this.

If the infant have a GROIN RUPTURE the only proper treatment is to keep on it day and night if it cry much, a

well fitting truss. In applying the truss be careful to return the rupture thoroughly, and endeavor to have it well adjusted or it will chafe and will not effectually cure.

If the child is TONGUE TIED so that it cannot apply its tongue to the nipple to suck, the frenum may be cut, but it will not be necessary to make more than a small nick or a slight cut in it.

MILK IN THE BREASTS OF NEW BORN INFANTS, or a serous fluid resembling it, is often found, and sometimes there is considerable swelling both of the breasts of male and female children. It is not the better way to apply plasters or to squeeze or press them, but the milk may be drawn out by putting an open top thimble over the nipple and drawing on it.

CHAFINGS may be caused by inattention to cleanliness. Fat babies are subject to them, and when there is disorder of the bowels or kidneys they cannot at all times be prevented. Thoroughly sponge the parts with tepid rain water, allowing the water from a well filled sponge to stream over them, then carefully dry with a soft towel, and perhaps dust over them sub-nitrate of bismuth. (F. 202.)

DIARRHŒA and DYSENTERY and also COSTIVENESS are among the ailments with which infants may be afflicted. I wish to be particular in giving directions, that these may generally be avoided, but I must again repeat that the nurse should never be influenced by my advice to do any thing contrary to the directions of the attending physician.

To avoid the subsequent necessity of giving medicine you must be very careful in their administration at first. It is indeed necessary that the meconium should be purged off at first, but nature in general provides such

physic as is required, and if the child is applied to the mother's breast, it obtains in the colostrum such medicine as it needs. Where the infant cannot obtain anything from the breast a gentle aperient may be given, and I name the following as being suitable: either molasses and water, raw sugar, a solution of manna in warm water, a teaspoonful of sweet oil, or of simple syrup of rheubarb, or in more obstinate cases, of castor oil, or one-fourth teaspoonful compound licorice powder, (F. 122) but you must never give a drastic purgative, and you must not repeat the aperient if the discharges become yellow and natural. A young infant ought to have from three to six motions in the twenty-four hours, the color ought to be of a bright yellow or orange, and of the consistency of mustard as ordinarily prepared for the table, and there ought not to be any lumps or curds in its motions. A mother or nurse ought to be very observant of the state of the bladder and bowels—should inspect motions daily and see that they are not slimy, or curdled, or green. If they are she should be very careful, especially in regard to what the mother eats and drinks. If the bowels are costive she must avoid the frequent repetition of opening medicine, however gentle and well selected the aperients may be. They interfere with digestion, often irritate the bowels, and render them more costive. For the sake of the child as well as herself, the mother may vary her diet considerably after the first week, she may eat boiled and stewed, broiled and roast meats, mutton, lamb, and beef, fish, game, and chickens, potatoes, turnips, spinach, celery, peas, beans, figs, bananas, prunes, baked apples, &c. (F. 45 to 60.) The bowels of the child that nurses generally (not always) keep pace with those of the mother, and she must endeavor both for her own sake and that of the

child, to keep her bowels loose by means of diet. If necessary she must take physic. (F. 107, 108, 109.)

If the constipated child nurses the mother and the mother constantly pays proper attention to her own health, and especially to her diet, the child will very seldom require physic. Indeed I would not give active physic when the child seemed well, if it did not have a passage oftener than once a week. If it has cow's milk or other food besides the mother's milk, do not boil the milk and you can add to the cow's milk, corn starch, or the following: Make a thin mush by boiling a small quantity at a time of unbolted wheat flour in water and straining it through a sieve while hot. The child may sometimes be fed with this alone, a little sweetened. Molasses may be given freely, or molasses and soda. The child should be watched, and if there is occasional costiveness, and at the time any indisposition, make a suppository of common soap about an inch in length and a quarter of an inch thick, dip it in water and pass it into the rectum. Or give an injection of less than a gill of water with perhaps a teaspoonful of molasses and a pinch of salt. But I would avoid the practice of giving an enema daily, as tending to get up a bad habit in the system. Should the costiveness have provoked fever, induced pain, or excited convulsions, active physic may be given, either castor oil, magnesia, calomel, or F. 108. But be sure that costiveness is not brought on by giving paregoric or other opiates, and let a child drink freely of pure cold and fresh water. The water may be boiled to destroy germs, and then cooled in a refrigerator; it should always be boiled before being used when there is an epidemic of bowel complaint prevailing.

In DYSENTERY there is a specific inflammation and

ulceration of the mucous membrane of the colon, especially of the lower part, and of the rectum—there is generally some fever, frequent and bloody stools, tenesmus, and griping pains. Sometimes it attacks an infant or a delicate child, there being at first for several days diarrhœa, the motions being slimy and frothy like frogspawn, afterward entirely mucous and blood. The child is dreadfully griped, strains violently, and screams, and twists about every time it has a motion, and there is vomiting and great prostration.

You should in treating the child at the breast still keep him to it, and give it no other food. If the mother's milk is not good, procure if possible a healthy wet nurse. If the child must be fed give it cow's milk from one healthy cow—fresh from the cow—small quantities at a time and frequently, mixed with gum arabic water. In the commencement a warm bath may be used, or as a substitute you may wrap the child in a blanket that has been previously wrung out of hot water ; over this put a dry blanket and keep the child thus enveloped for twenty or thirty minutes.

Formula 74 and 99 may be used, but the dose for a young child must be small to accord with its age.

CHOLERA INFANTUM is more prevalent in the United States than in any other country. The continued heat of summer is a predisposing cause, and improprieties in diet and clothing, worms, premature weaning, and teething are exciting causes.

You may treat this disease in the initial stage by giving F. 80, and also for a child a year old, injections of a gill of warm water in which a teaspoonful of common salt has been dissolved, allowing the patient three or four times a draught of warm water, as much as it desires to drink.

Perhaps the drink will be immediately vomited, but it will at least remove irritating matter from the stomach. The injection, too, may operate immediately, but it may bring with it a fecal or bilious discharge, and if several times repeated, its effects will be salutary. A muslin cloth heated almost to scorching and applied once or twice dry to the neck, may stop vomiting, and draughts applied to the extremities may also be of much benefit. After using injections of warm soft water, anodyne injections may be given three or four times a day; but cases of this kind are too serious for any nurse or mother to treat, if the services of a physician can be obtained; and I will only mention one or two things more. When the extremities are cold put the child for a few minutes in a warm bath of mustard water, and then employ friction to the skin.

I have found chicken tea made by boiling the chicken very soon after it is killed, very useful in checking the vomiting and curing the child.

Of course a physician will be obtained in these serious cases if possible.

RETENTION OF URINE in the newly born infant if slight is easily removed by giving two or three drops of spirits of nitre once an hour in a little sweetened water, or if obstinate it may be aided by castor oil and the warm bath. A little pumpkin seed or parsley root tea also succeeds remarkably well.

APTHÆ is usually called the baby's sore mouth. It generally begins on the inner part of the lower lip or corner of the mouth, as a small white speck which resembles a coagulum of milk. These apthuous white pustules soon appear over the inside of the cheeks and on the tongue and gums. The eruption is very white and looks as if

whey or curds were spread over the mouth, which is hot and painful, and the disease sometimes does, and at other times does not cause fever. I regard this complaint as being one of the germ diseases, although the fact has not yet been demonstrated. The children fed upon farinaceous food are most liable to this disease, and during its continuance, if the child is not at the breast it should be kept entirely to the milk of one cow. Medicine should be given with regard to the stomach and bowels. If the passages from the bowels are green, magnesia is a proper kind of physic, and when there is diarrhœa use formula 80, 77, 81.

GENUINE JAUNDICE may attack a young child, but this is to be distinguished from those cases where there is only a generally diffused YELLOW COLOR OF THE SKIN. In the latter class of cases there are no symptoms indicating any serious disease; the yellowness may continue for several days, and this disappears without the aid of any medicine and without leaving any evil behind. But in jaundice the whites of the eyes and the tears are tinged yellow, and, besides, the feces are paler than they should be, the urine is yellow, and other serious symptoms are added. If the bowels be costive, or irritated to frequent efforts, if the abdomen swells and becomes tense, if the child is uneasy and inclined to vomit, if it refuse the breast and frequently moans as if in pain, if it emaciate rapidly, jaundice in a bad form is present, and there is probable disease of the liver. Call the doctor.

I need not continue my instructions any farther in regard to the diseases of infancy, as you are expected to act as far as you can under the directions of a physician. But I must again advise you as to how you are to treat your medical advisor. Give him your entire confidence.

Be truthful and candid with him. Have no reservations; give him a plain statement of the symptoms. Be prepared to state the exact time the child showed any illness. Tell him if the child had a chill; if there be any eruption on the skin, note the quantity and appearance of the urine, the number, color, &c., of the stools—all the symptoms of the disease. Strictly obey the doctor's orders in diet, in medicine, in everything, and never omit any of his suggestions. If the case be severe, never call a second physician without first consulting and advising with the one first chosen; speak in the presence of children with respect and reverence of the doctor, and endeavor to have them like him. Send for the doctor when practicable early in the morning, as the daylight is most favorable for making the examination, but if the illness come in the night do not delay on that account; if you do not know what to do, it is better that the doctor be called early than late.

CHAPTER V.

CASES OF DIFFICULT LABOR.

I wish to give you so much instruction in regard to cases of difficult labor that you may at least be prepared to decide in any case when the services of a physician is indispensably necessary, to decide whether the parturition in a given case is a natural one that does not need any assistance, or an unnatural one requiring the assistance of the art of midwifery, scientific or manual, for the relief of irregularities and difficulties. In general I shall adopt Churchill's divisions and definitions as I think they are very concise and correct.

TEDIOUS LABOR.

"DEFINITION. The head of the child presents and the labor is terminated without manual or instrumental assistance, but it is prolonged beyond twenty-four hours from causes which occasion delay in the first stage."

Prolongation of labor is of comparatively small consequence when the membranes are still intact, as they serve to protect the soft parts of the mother as well as the body of the child from injurious pressure, but the mere lengthening of the labor may become a serious thing when the head has entered the pelvis, when the uterus is strongly excited by reflex stimulation, and when the maternal soft parts as well as the fœtus and cord are exposed to severe pressure. When we find no evil resulting from the delay we need not interfere, but when we can remove the cause of it we are bound to do so.

In tedious labors the woman becomes fatigued, the loss of sleep is much felt, her spirits become depressed, and the stomach is more or less disturbed, but when the other bodily functions are performed regularly, the skin is cool, the pulse quiet, the tongue clean and moist, there is no headache, and the pains recur tolerably regularly, the condition of the patient is favorable, though the pains are inefficient and vary in their duration and frequency. There is usually loud outcry during the pain in the first stage of labor, but there is often sufficient remission of the suffering for the woman to get some quiet sleep, and generally there is progress to the labor.

INEFFICIENT ACTION OF THE UTERUS occurs most commonly in women confined for the first time, and sometimes we can ascribe it to no cause but constitutional peculiarity, or a deranged state of the digestive organs, or

mental depression ; in other cases it may be caused by irritation of the os and cervex uteri.

The skilled nurse may properly send for a medical man, though he is not indispensably necessary in such cases. The best thing which she can give in such cases is a quarter grain dose of morphine to suspend the pains and induce sleep, or if this is not thought best it may be proper to give physic or stimulating enemata. Never give ergot to increase the pains, but it may be proper to give several grains of quinine. However, giving medicine must be left as much as possible to the physician.

Excessive amount of liquor amnii with undue distention of the uterus in some cases renders the pains inefficient. The unusually large size, and the fluctuation of the abdominal tumor may be obvious, but although an accoucheur might deem it advisable to evacuate the waters, the skilled nurse who could not be certain that there was a favorable presentation, should not do it. She must exercise patience herself and encourage the patient to do so, and time will probably do the work, though it is better to commit the case to a doctor.

An undilatable os uteri, which remains rigid although the pains are severe, may sometimes be felt with its edges thin and stretched over the head, and sometimes thick and tough. In the majority of cases patience and time may overcome the obstacle, but as it is best in some cases to give chloroform, chloral, &c., and in some instances to use local means to relax or dilate the os, the physician should be sent for. The nurse may properly give the patient a hip bath.

Premature escape of the liquor amnii and obliquity of the uterus are both causes of tedious labor, but not cause for apprehension or special interference.

I have already given some hints in regard to the treatment of the latter class of cases.

THE POSTERIOR LIP OF THE CERVIX UTERI IN SOME INSTANCES IS RETRACTED WHILE THE ANTERIOR IS DRAWN TIGHTLY OVER THE CROWN OF THE HEAD. In such cases it has been my practice to draw with my finger the anterior lip forward, and during the time of the pain to press my finger against the head of the child. I do this believing that the anterior lip is caught between the head and symphasis pubis, and that it will be better retracted while support is given to the head.

POWERLESS LABOR.

"DEFINITION. The labor is prolonged in the second stage by causes which act on the uterine powers primarily or secondarily, rendering the pains feeble and inefficient or totally suppressing them." In consequence of the stage at which the delay takes place, certain symptoms arise which render speedy delivery imperative.

The second stage may continue twenty hours or more without any bad symptoms, but usually if it exceeds twelve hours some of the following symptoms may be observed: The pains become irregular as to recurrence and force—perhaps become weaker—there may be rigors or shiverings—the vomiting may be distressing—there may be constant restlessness and fever—the vagina and uterus may be hot and tender to the touch—and the pressure of the child's head may prevent the evacuation of the bladder. The same causes (weak constitution, mental emotion, disease, &c.), which in the first stage rendered the labor tedious without bad symptoms, now occasion these and perhaps even more alarming indications. If an experienced accoucheur now arrives to take charge

of the case he will be likely to apply the forceps, but it would have been better if he had been there and applied them sooner, before the patient had undergone so much suffering; and the midwife who attends a woman in the first stage of the labor should ascertain if any of the following causes of powerless labor exists: Is there a weak constitution or one exhausted by disease? Is it a first labor and the woman of advanced age? Has the patient had very many children? Is there excess of liquor amnii? Is there malposition of the uterus? No midwife should undertake to manage such a case alone.

OBSTRUCTED LABOR.

"DEFINITION. The progress of the labor is impeded by some mechanical obstruction in the passages connected with the soft parts, which by causing delay in the second stage leads to the developement of symptoms of powerless labor."

The symptoms that arise and that cause anxiety are the same as in a case of powerless labor, except that while in the latter kind the pains are feeble, in the case of obstructed labor the pains may be vigorous and severe but ineffective in consequence of obstacles. I may say, however, that these obstacles have not been often met with in my practice. Since I commenced the practice of midwifery three thousand cases of pregnancy have been under my observation for treatment, and I have not yet met with any of the following causes of obstructed labor: Occlusion of the os uteri, cancer of the os uteri, undilatable vagina, tumors in the pelvis, or diseased ovary, stone in the bladder, imperforate hymen, hernial protrusion into the vagina, or blood effusions, or swelling of the soft parts. I have met with one case of excessive œde-

matous effusion of the vulva, which I relieved by puncturing the skin; one case of cystocele which I relieved by first drawing the water and then returning the bladder, before the head of the child descended into the pelvis; one case of ovarian tumor that was not at that time in the pelvis; one case of small fibrous tumor on the neck of the uterus, which did not much obstruct the labor; and numerous cases where hardened feces in the rectum was an obstacle until they were removed by the use of enemata. In cases of obstructed labor the skilled nurse will show her wisdom by detecting the obstructions and sending for an accoucheur.

DEFORMED PELVIS.

"DEFINITION. The progress of the labor impeded by abnormal deviations in the form of the pelvis, giving rise to delay in the second stage, or rendering the descent of the child impossible without assistance, or altogether impracticable. The symptoms are those of powerless labor."

The EQUALLY ENLARGED PELVIS, enlarged in all its parts, is not often met with, and is of no obstetric importance. If in any case this condition is diagnosed preceding or during labor, the patient should be watched by the nurse lest labor close so precipitately that the child falls to the ground.

THE EQUALLY CONTRACTED PELVIS—equally contracted in all its diameters, generally renders the labor difficult and tedious but not impracticable, by the natural powers. Other distortions such as has often been caused by rickets, &c., offer great obstruction to the passage of the child. In some cases a modification of the position of the child allows it to descend, but in many cases it is

necessary to interfere and terminate the labor artificially. The nurse should not wait for unfavorable symptoms to appear before she sends for a man that is able to use the forceps, &c.

MALPOSITION AND MALPRESENTATION OF THE CHILD.

Unnatural or abnormal labor may be caused by some peculiarity on the part of the child, in the position or presentation. These cases demand the services of the skilled accoucheur, and I do not intend to hint that the nurse should ever attempt to do what an educated physician should be called to do in these cases.

FACE PRESENTATIONS sometimes retard the labor so much in the second stage as to give rise to unfavorable symptoms. In cases where the action of the uterus is so energetic as to finally expel the child, the sufferings of the mother are severe and prolonged. I have in my practice met with four cases, three of which were delivered by the natural powers, the children living; in one case craniotemy was performed. The mothers all lived. The diagnoses of face presentations is not easy at an early stage of labor. The finger first touches the forehead, which may be mistaken for the vertex. When the membranes are ruptured we may be able to make out the presentation. We may distinguish the edges of the orbits, the prominence of the nose, the mouth, &c. The bridge of the nose is the best guide, it being prominent, firm, and unlike any part of the breech or vertex. The face becomes tumefied during the labor, and the cheeks pressed together to resemble the nates, and it may be mistaken for a breech presentation. But in either presentation the proper course for the nurse is to leave the case alone in the expectation that the natural efforts will be sufficient

to complete delivery. The child when born has a frightful appearance from the swelling and discoloration of one cheek, &c., but the injuries pass away in a day or two.

THE FOREHEAD TOWARDS THE ARCH OF THE PELVIS at the time of delivery is not favorable, but unless the pelvis is proportionately small no interference is necessary.

The BREECH may present at the brim in different positions, and the breech is distinguished by its roundness and softness, by the cleft between the buttocks, by the arms and by the organs of generation. In some cases the labor is concluded as quickly as if the head descended, in others it is more tedious. The results as regards the mother are as favorable as in head presentations. The danger to the child is in direct proportion to the length of time between the birth of the body and that of the head.

When the body is expelled so far as the umbilicus, the danger to the child commences, for at this time the cord may be pressed between the body of the child and the pelvic walls. A loop of the cord should be pulled down, and if it freely pulsates the child can probably be delivered alive. Generally a judicious traction on the part of the accoucheur, combined with firm pressure through the abdomen applied by an assistant, will effect delivery of the head before the delay has had time to prove injurious to the child. If the arms of the child are above at the side of the head, the doctor will bring one down by passing a finger over the shoulder as near as possible to the elbow, and then drawing it across the face and chest until it arrives at the external orifice, but all this time it is the part of the nurse to continue to make effective pressure upon the abdomen of the mother—also while he delivers the shoulders—and while he perhaps introduces two fingers into the vagina of the mother to reach the upper jaw

of the child and make pressure upon it, so as to depress the chin and facilitate the expulsion of the head.

PRESENTATION OF THE KNEES and PRESENTATION OF THE FEET is identical in its progress with breech cases, and the treatment of breech cases applies to footling presentations, but it is best to avoid pulling on the foot or feet that come down, as it is safer for the child if the lower part of the body is delivered quite slowly. Even if the nurse should in an emergency deliver the child, she should help principally by pressure on the mother's abdomen.

The only rule that I would have the skilled nurse adopt in regard to these cases, is that it is necessary that she should discover as early as possible if the labor is not a natural one, and if it is unnatural, should obtain the services of a physician as soon as possible. The same rule applies to cases of placenta previa hemorrhage, but I shall have more to say of these hereafter. A case of compound presentation where the hand and arm presents with the head, or in which the feet and hands, or one of each present together, also imperitively demand the services of an experienced accoucheur without delay. The nurse will be impotent to give any efficient help until the doctor arrives.

Presentation of the SUPERIOR EXTREMITIES will receive from me a full and complete description, because I believe that under certain circumstances the nurse should be prepared to operate by turning. As this radical opinion may perhaps be opposed by my medical brethren, I offer the following reasons for it which I consider a sufficient justification.

1. Cases of this class commence with the ordinary symptoms of labor; their peculiar character cannot usually

be distinguished until the os is well dilated, and this is the only favorable time to perform the operation of turning.

2. Although in cities and villages generally, a physician's services can in most instances be immediately obtained, in the country it is not always practicable to obtain them within an hour or two of time.

3. Such knowledge as is necessary for the performance of this operation may be obtained from such description and instruction as can be given in books.

4. There are some women who possess the necessary traits of character, the complete exercise of their faculties, with the perfect coolness which is demanded of the operator in such a case.

5. I do not advocate trusting the operation to a nurse when the services of an accoucheur can possibly be obtained within the proper time.

6. The services of a physician, if obtained one or two hours after the arm is first thrust down in the vagina, may not be of any use because the time for turning is passed.

7. The operation of turning, performed by a properly instructed nurse, does not involve the least danger to the mother or child.

8. The only danger connected with this operation arises from the size of the hand of the operator, and the woman's hand is small.

9. It is a historical fact that at one period practitioners overrated the performance of turning, and extended its use to unsuitable cases, and after the invention of the forceps, they fell into an opposite error. It is possible that we may be in error if we hold that the nurse cannot be instructed to perform the operation of turning.

10. I do not advise that the nurse should ever attempt

to turn in those cases in which the membranes have been long ruptured—the shoulder and arm pressed down into the pelvis, and the uterus contracted around the body of the child. I once succeeded in a case that two experienced physicians had tried in vain for several hours to turn, and I never had very much difficulty in turning, but there have been many cases where excellent operators could not succeed in turning.

In cases of PRESENTATION OF SHOULDER, ARM OR TRUNK, delivery by the natural powers is quite exceptional, though the natural powers have occasionally succeeded in expelling the child. The safety of the mother and child depend upon the early detection of the abnormal position of the fœtus, and upon their receiving proper treatment before labor has been long in progress.

The position of the child is one intermediate between the long and transverse diameters. It may lie with its back towards the abdomen of the mother or with the back towards the spine of the mother, and the head of the child may be towards the right or the left of the mother.

The existence of a shoulder presentation is not commonly suspected until the first examination is made during labor. Suspicion will arise from finding on examination that we are not able to reach the presenting part, and that the os uteri does not dilate as usual, and that when it becomes dilated the bag of membranes protrude of a conical form, but this is common to all malpresentations. When the shoulder has descended a little it is recognized as a round, smooth prominence, rounder than the elbow, and we may be able to reach the axilla, &c. The elbow may be recognized by the sharp prominence of the bone, and the hand can be distinguished from the foot by the fingers being wider apart and more readily separated

from each other than the toes, and by the thumb which can be carried across the palm. The situation of the thumb and the aspect of the palm of the hand will mark whether it is the right hand or the left.

As soon as the nurse ascertains or suspects from an external palpation or a vaginal examination, that it is a cross birth she should send for the doctor, who ought to be there as soon as the membranes are ruptured, and the nurse must not be very persistent in making examinations lest she rupture the membranes prematurely. She may perhaps give a small dose of morphine, but I would not advise that she give chloroform as it is not necessary.

The right time to turn the child is when the os uteri is dilated, either before or immediately after the rupture of the membranes, and if a doctor cannot be soon obtained, it is better that a skilled nurse should turn the child, and if she is properly instructed, she should do it carefully and slowly, but without any fear and confidently. She can assure the patient that she will be able in a short time to relieve her sufferings.

In England the ordinary position for turning is on the left side. I prefer that the patient be placed across the bed on her back with her legs drawn up and supported by assistants. I now describe my own mode of operating.

I bare my right arm and hand (sometimes the left), lubricating it freely. If the waters have only recently escaped, and the os be dilated, the operation is performed with ease, especially after we have determined the position of the child.

I press the fingers together in the form of a cone, the thumb between the fingers—slowly and carefully press them into the vagina in an interval between the pains, and constantly and slowly press the hand in, only when

the contractions of the uterus remit ; never using any force, gently pass the fingers into the os ; gently open the fingers a little occasionally to dilate the os sufficiently, and when it is expanded pass the hand into the uterus, make out the presentation accurately, so as to keep my hand to the abdomen of the child ; always keep the hand still during a pain ; when there is an interval between the pains, carefully search for the feet ; when one of the feet is found, clasp the leg at the knee with one finger ; flex the leg at the knee so that the finger has a good hold of it, draw it down in the absence of a pain ; as the knee approaches the os when it is drawn down over the abdomen of the child, the shoulders and head recede towards the fundus, and when the head has reached the fundus and the knee is brought through the os, the case is converted into a knee presentation, and I deliver slowly but without needless delay—making a little traction during each pain, the management being conducted as in feet presentations, and the whole process being assisted by pressure made on the uterus by my left hand, or by the hand of an assistant.

Possibly these directions will be better understood if I use the language of another who directs :

1. That the patient be placed on her left side near the edge of the bed.

2. The os externum is then to be dilated with the fingers reduced into a conical form, acting with a semi rotary motion of the hand.

3. When the hand is passed through the os externum it must be slowly conducted to the os uteri. We may perforate the membranes with the finger if they are not broken.

4. The hand must then be passed along the thighs and

legs of the child until we come to the feet. If both the feet lie together we must grasp them firmly with one hand, but if they are distant from each other we may deliver by one foot.

5. Before we begin to extract we must be sure that we do not mistake a hand for a foot. The feet must be brought down with a slow, waving motion into the pelvis, when we are to wait till the uterus contracts, still retaining them in the hand.

6. The feet are to be brought down with each return of the pain, and the labor may be finished partly by the efforts of the mother and partly by art.

7. If the toes are turned towards the pubis the back of the child is towards the back of the mother which is an unfavorable position.

8. If the toes are towards the sacrum, the back of the child is towards the abdomen of the mother, and this position is advantageous when the head comes to be extracted.

9. When the feet of the child has passed through the os externum, wrap them in a cloth and holding them firm wait till there is a pain, during the continuance of which gently draw down the feet. When the pain ceases we must rest, we merely assisting the efforts of the patient.

10. When the child is brought so low that the funis reaches the os externum, a small portion of it is to be brought out to slacken it, and from this time the operation is to be finished as speedily as it can be with safety, but if the circulation of the funis be undisturbed, there is no occasion for haste as the child is in safety.

11. If the child should stick at the shoulders the arms must be successively brought down.

12. When both the arms are brought down the body

of the child must be supported upon our left arm and hand, the fingers on each side of the neck, and if the head should not come easily away, we must introduce the forefinger of one hand into the mouth of the child to render the position of the head more convenient for passing.

12. When a child has been extracted by the feet, the placenta usually separates very easily, but in the management we are to be guided by the general rules.

13. In these cases the child usually needs to be recussitated, and the nurse should arrange so that hot and cold water may be at hand if required.

In these descriptions of the operation I have mentioned both the back and side as good positions for the mother, because some accoucheurs prefer one position and some the other. Some prefer to have the patient on the hands and knees. But if the nurse have the instructions here given well in her mind, she can operate in either position. If she ascertains at first how the child lies she may sometime reach its abdomen better if she introduces her left hand, but the main point is to proceed slowly and carefully. She should be careful in passing in her hand to change the direction of it in accordance with the pelvic axis, and should not use much force at any time. The danger to the mother is very small indeed ; the danger to the child arises, as in breech presentations, from the compression of the funis, which commences about the time the buttocks appear at the os externum. But the safety is only when the operation is performed at the proper time. The nurse must never operate if the services of a physician can be obtained at that time, but when it is necessary she may proceed to turn, doing it slowly and properly, but fearlessly and confidently. If the doctor

that is sent for is informed before he arrives that it is a case of hand presentation, he will come dreading the difficulties that he may encounter, and if he can have the satisfaction of knowing when he comes that the woman is safely delivered, he will be exceedingly glad.

CHAPTER VI.

CONCLUDING INSTRUCTIONS IN MIDWIFERY.

What I shall say of PLURAL BIRTHS, and MONSTERS, of CHILDREN AFFECTED WITH HYDROCEPHALUS, OR ASCITES, of EXCESSIVE SIZE OF THE FŒTUS, of DEFECTS IN THE FORMATION OF THE FŒTUS, of PROLAPSE OF THE FUNIS, &c., will be compressed in a few words. I am not instructing the nurse to attempt to conduct a case of even natural labor without having a physician if he can be obtained, but she should consider the services of a trained practitioner *imperatively* necessary in these unusual cases. In either instance there may be a safe delivery by the natural powers alone, and the nurse may act in an emergency, but it would not be consistent with the plan of this work for me to describe in detail the various operations that are sometimes performed in these several cases, or to give instructions in the use of instruments, which I advise the nurse never to use.

In regard to those instances where it seems as if it would be necessary to use instruments, I quote the following rules adopted by accoucheurs: 1. Meddlesome midwifery is always bad. 2. In no case need we interfere when the obstacles to be overcome can be overcome

in a reasonable time by nature or without an operation. 3. Cases in which instruments are to be used are exceptions to the general rule, and no instrument should be used in a clandestine manner. 4. We should not have such an aversion to the use of instruments that we too long delay that assistance we have the power of affording with them.

PLACENTAL PRESENTATION.

PLACENTA PREVIA will never be treated by the nurse, but she should know its nature, know that it is this that causes unavoidable hemorrhage, and she should not fail to obtain a skillful physician early, to attend the case. The flooding is the necessary consequence of the dilatation of the os uteri, by which the connection between the placenta and uterus is separated, and the more the labor advances, the greater the disruption, and the more excessive the hemorrhage.

The woman usually passes through the early part of pregnancy without any sign that denotes the peculiar attachment, but the placenta can easily be distinguished from the membranes or coagulated blood as soon as the os uteri is a little opened. When a hemorrhage comes on from this cause the patient is never free from danger till she be delivered. Often the medical man is obliged to free the patient from imminent danger by artificial delivery, but I can conceive of no circumstance in which a *nurse* would be justified in turning for unavoidable hemorrhage.

Before, during, and after the delivery, the appliances used in other cases of hemorrhage may be used with some advantage, but I would hardly advise the nurse to do any thing before the doctor arrives.

ACCIDENTAL HEMORRHAGE.

That form of FLOODING that arises from a partial and accidental separation of the placenta which occupies its usual position, must here be briefly referred to, as the nurse may be called on to do something in an emergency. The immediate cause of the flow is the separation of some portion of the placenta from the womb, and the laceration of the vessels. The hemorrhage is at first internal, is accompanied with dull pain at the spot where it takes place, it generally becomes external, it may or may not be attended with the discharge of coagula from the os uteri, and when the discharge commences it varies in quantity from a few ounces to an amount that is alarming. It is generally necessary to make a digital examination, to distinguish the accidental from the unavoidable hemorrhage.

Until the doctor arrives the patient should be kept in bed on a hard mattrass and very lightly covered with bed clothes. The temperature of the room should be kept very low, and nothing but cold water allowed.

The danger from hemorrhages that occur at or near the full period of utero gestation, may often be estimated by the absence or degree of pain, as well as from the quantity of the discharge. Hemorrhages are much more dangerous with sudden than with slow discharges of blood, and women are always in greater danger when they are not accompanied with pain. Puerperal convulsions, whether of the hysteric, epiliptiform, or apoplectic variety will always demand and almost always receive the prompt attention of the physician.

While the nurse is waiting for the doctor to arrive she might possibly administer a cathartic, thirty grains of bromide of potash, and an enema, but as a general rule

she should not give anything. She might insert a wedge or roll of linen between the teeth to prevent injury to the tongue, and she should remove every thing out of the way, by striking against which, the patient might hurt herself.

PART V.

Ætiology, Symptomotology, Medication, Nursing.

CHAPTER I.

CAUSES OF DISEASE.

The causes of disease are spoken of by authors as predisposing, and exciting. By proximate cause of disease is meant the cause of the symptoms present; this cannot appropriately be dwelt upon here.

By exciting cause is meant the immediate cause of a disease, and the distinction from predisposing cause arises from the fact that when two persons are exposed to something injurious to the health, they may not be equally affected.

It has been said that if twenty persons undergo hardship and exposure from shipwreck, the effect of the wet and cold may be in one to cause catarrh, in another rheumatism, in a third pleurisy, in a fourth opthalmia, in another inflammation of the bowels, and fifteen may escape without any illness at all. A predisposing cause is defined to be anything whatever, which has had such an influence on the body as to have rendered it unusually susceptible to the exciting cause of the particular disease. In most cases the distinction is obvious, but it is sometimes difficult to say of a given cause whether it ought to be ranked among the predisposing or the exciting causes.

Disease is often warded off notwithstanding the presence of the exciting cause, when we ascertain and prevent the predisposing cause of it, and it may sometimes be averted in despite of strong predisposition, if we know and can guard against the agencies by which it is capable of being excited.

When we enumerate causes of disease we see among them many that under ordinary circumstances minister to life, health, and enjoyment; and I can hardly refer at all to the varying circumstances under which they become the medium of pain, disease and death. These circumstances are so various, so many of them are apt to be put in operation at the same time, and so little power have we of excluding them one after the other, so as to ascertain the exact efficiency of each, that our observation respecting their actual effects are open to much fallacy.

We cannot for instance in a given case estimate accurately the effect of impurities in the atmosphere such as organic and inorganic dust, nor the effect of differences in degree of its natural qualities such as extremes of heat and cold, sudden variations of temperature, excessive moisture or dryness, different electric conditions, differences of pressure, a deficiency of light, and the amount of ozone, &c.

OF HEAT AND COLD AS EXTERNAL AGENCIES CAUSING DISEASE.

The range of temperature compatible with human life is very great; men live in the hottest and the coldest climates, where the earth produces any sustenance for them. It requires more care to preserve life under intense cold than under intense heat. Tropical climates are thickly peopled where the thermometer ranges from 80° to 100°

for a long time together. In arctic countries on the other hand where the thermometer sinks to 40° or 50° below zero, we still find inhabitants, but they are few and thinly scattered. It is probable that at a degree of temperature a little greater than that of the equator or a little less than that of the poles men would perish.

Man is capable of existing under certain circumstances for a short time, and enduring a much higher degree of heat than the general atmosphere attains in the hottest portions of the earth, but there are generally some deleterious effects from hot climates or continued hot weather.

The effect of HEAT is to stimulate the organic functions of the body, but when considerable heat is applied for some time together its effect is to cause languor and lassitude, want of energy, a disinclination for exertion both bodily and mental; it has a depressing effect generally upon the animal functions or the nervous system, and there are some forms of disease that are distinctly traceable to heat as a cause.

We all know the effect of hot weather in causing perspiration, and when the operation of high temperature is continued for some time it has a marked influence upon the liver, increasing the quantity of bile that is secreted, and altering its sensible qualities; this is sometimes followed by inflammation of the liver.

In this country those attacks of vomiting and diarrhœa which are so common towards the latter end of summer or in autumn are the effects of a succession of hot days. In tropical climates the morbific effects of external heat are still more conspicuous, tending to violent disorders of the stomach and intestines, and also to acute inflammation of the liver and to acute abscesses in that organ.

In these cases the heated atmosphere unduly stimulat-

ing the secreting function of the liver creates the predisposition to the disease, while the exciting cause of the inflammation may be exposure to cold.

There may be deleterious effects from exposure to cold where the climate is quite hot. For instance a man may after the heat occasioned by the employments of the day, undress and lie opposite a window, his shirt wet with perspiration, to enjoy the sea breeze at night, and though the thermometer may be as high as 80° he may have a sensation of cold. If there is real chilliness it may be deleterious.

Heat sometimes acts as an *exciting* cause of disease—it produces sunstroke, or it may produce an eruptive disease such as prickly heat, &c.

The effect of extreme COLD (I use the term cold in the popular acceptation), when its application is continued, is that of a sedative upon the organic functions. Though at first causing pain in the extremities, if continued it causes sleep or overpowering drowsiness. Before this complete stupor comes on there may be a blunting of the sensations and confusing of the intellect, giving to the person exposed to it, the appearance of one intoxicated. When persons in this state are suffered to sleep, and the operation of the cold continues, they become less and less sensible to external impressions until death closes the scene.

But the effect of cold upon the body within certain limits of intensity and duration is that of a tonic. When its refrigerating and sedative properties can be sufficiently counteracted by exercise and warm clothing, cold is stimulating, refreshing, and invigorating to mind and body, it clears and sharpens the faculties, bestows alacrity and cheerfulness of spirits, and may become a curative agent.

Yet exposure to cold is one of the most common causes of various complaints. As a rule it is true that there is danger from sudden vicissitudes of temperature, although the proposition requires limitation. No peril need attend a change from a hot to a cold temperature if the power to evolve heat inherent in the system be entire and active and persistent, not lessened by any of those circumstances which have the effect of weakening it, such as local disease, and fatigue. Cold is dangerous, not especially when the body is hot, but when it is cooling after being heated. At such times taking a large draught of cold water, or cooling the body suddenly some other way might cause death immediately; if not, an inflammation of some internal part of the body might arise.

Every thing that has the effect of weakening the system and so diminishing the power of evolving heat, favors the morbific effect of cold, and is a predisposing cause of disease. The most common of these debilitating circumstances are fasting, evacuations, fatigue, a last night's debauch, excess in venery, long watching, much study, and rest or inaction immediately after it, or after great exercise.

The faculty of evolving heat is weak in old persons and in the newly born, and these are often the victims of the power of cold.

The bad effects of cold depend very much upon the duration of the sensation. Even slight feelings of chilliness, if long protracted, are apt to terminate in some form of disease.

Cold is more likely to prove injurious when it is applied by a wind or currant of air, and the injurious operation of cold is augmented when it is accompanied with moisture —wetness is the worst way in which cold can be applied.

The contact of wet or damp clothes with the skin, both increase and prolong the sensation of cold. A foggy atmosphere is more prejudicial than a clear one of the same temperature. While we are asleep, also, our power of resisting the effects of cold is diminished.

The power of habit enables a person to resist the effect of cold, and we may sometimes turn our knowledge of it to good account in gradually fortifying the system against the influence of cold that cannot be avoided. But we must not, while we fear to render our children effeminate by over care and much clothing, run into the opposite extreme and endanger their health by exposure. The process of hardening is doubly dangerous when it is attempted with children who were originally delicate, and should never be tried on any child or any person who is unsound, who shows any signs of present or approaching disease, or any marked predisposition to future, and especially to scrofulous disease.

An abiding sense of chilliness must never be permitted even when we are endeavoring to accustom a child to cold. If they can be kept in the cold air, and at the same time be kept feeling warm either by exercise, diversion of the mind, or by clothing, the result as regards the health is good.

The cold bath, and especially the shower bath, is a good means of fortifying the body against cold air. When we take a cold bath in the morning, if the sense of cold does not remain long, and is followed by a glow of warmth, the bath is sure to do good. If, however, after the bath we suffer headache, and continue to be chilly and languid or uncomfortable, it should at once be given up as useless and dangerous.

EFFECTS OF THE SEASON UPON HEALTH.

In this country, generally, catarrh and coughs and pectoral complaints of all kinds, are most apt to prevail in the winter and spring months, while bowel complaints are more numerous and distressing in the summer. The mucous membranes of the air passages sympathize with the skin under the agency of external cold; those of the stomach and intestines under that of heat.

The thoracic disorders which commence or grow worse in the winter are often fatal, and there are various other maladies that are aggravated by cold, so that the mortality of winter is greater than that of summer. Bowel complaints are more prevalent at the latter part of summer or early fall, when moderately cold days succeed a long period of hot weather, the high diurnal temperature being the predisposing cause, and the cold exciting or bringing on the disease.

I shall not refer to other causes of disease except to say that if two persons marry each other who have a hereditary predisposition to disease, their children, if they have any, will probably not be healthy.

CHAPTER II.

SYMPTOMS OF DISEASE, WITH INSTRUCTION TO NURSES.

Symptoms are the signs by which we know that disease is present. Every circumstance happening in the body of the sick person capable of being perceived by himself or others, which can be made to assist our judgment concerning the seat or nature of the disease, its probable course and termination or its proper treatment, is a sign or symptom.

These phenomena are the evidence upon which the whole art of the physician proceeds. It is important that the nurse should know how to note the symptoms, not only that she may know how and report to the doctor changes that occur in his absence, but that she may be able also to minister to those who are suddenly attacked with sickness, and to judge whether in cases of slight indisposition it is necessary to send for a physician.

By arranging and comparing symptoms, and by noting the circumstances under which they occur, the physician can distinguish the disease, and learn what are the indications of treatment—this belongs especially to him. But it is very important that a nurse should know how to note all changes as they occur, and sometimes it is best she should keep a written record of them. An important point in a trained or skillful nurse is that of her ability to observe accurately and describe intelligently what comes under notice in the absence of the physician. She should cultivate the habit of strict observation, and simple and

truthful statement—neither deficient, exaggerated, or perverted, stating facts and not opinions.

Symptoms or phenomena which accompany disease may be *subjective*, those which are evident only to the patient, or *objective* which are observable by others. Both sorts of symptoms shed mutual light on each other, and as the statements of the patient are not always trustworthy, the nurse should be careful not to let anything pass unseen that can by vigilance be noted.

The following directions will help the nurse to cultivate the habit of observing symptoms :

Try to learn all you can of the previous history of the case; you will sometimes get information which the patient would not be likely to communicate to the doctor in person.

Note the patient's apparent age with any indications of disguised age, signs of weakness—whether corpulant or bloated ; note any deformities, swellings or wounds, and notice the attitudes and expression of the countenance.

A sufferer instinctively takes THE POSITION most conducive to ease. When one lung is affected the patient lies on that side, that the healthy one may have the greater freedom of motion. When there is peritonitis (inflammation of the bowels), he lies on his back with his knees drawn up to relax the abdominal muscles. If there is colic alone he may lie on the abdomen, as pressure may relieve his pain When a patient has been persistently on his back, if he turns onto his side it is a sign of improvement.

Inability to breathe termed ORTHOPNŒA, occurs in affections of the heart, and also in asthma. Lying quietly in bed is usually a favorable sign. Restlessness and slip-

ping to the foot of the bed, in low stages of fever, are bad signs.

Of the uneasy, morbid symptoms, *pain* is the most important, and most common. Pain occurs in nearly all inflammations, and it may occur where there is no inflammation at all.

Bones, muscles, tendons, ligaments, the bladder, the kidneys, the uterus, all modify in a manner that is peculiar to themselves the pain that is produced by injury or disease. Such terms as the following are used to express a peculiar character of pain : It is said to be sharp, shooting, growing, burning, dull, heavy, tearing, and so on.

If pain is felt in any part when pressure is made upon it the heightened sensibility is called TENDERNESS, the part is said to be tender. A part may be both painful and tender, as it usually is if the pain continue for a time ; it may be tender without being painful as it is usually, if pain continued for a time and then ceased.

Itching is an uneasy sensation allied to pain. It often affects the natural outlets of the body. It occurs about the rectum from the motions of little worms that nestle there, and other causes ; and this itching of the rectum, and likewise of the pudendum, are distressing complaints, harassing the patient continually, preventing sleep and requiring medical treatment (F. 195). The tingling and pricking often felt in the windpipe, and provoking coughing, has some analogy to itching.

NAUSEA is sometimes a direct symptom of gastric disorder, at other times it is a very important indirect result of disease at some distance from the stomach. The nausea which is so troublesome to pregnant women, is an instance of a morbid sensation, sympathetic of irritation in a distant organ.

DIZZINESS or vertigo results sometimes from disease within the head, and sometimes it is the indirect result of disease of the stomach or of mere debility.

A sensation of sinking, sensations of weight and lightness, of drowsiness, tenesmus, strangury, heartburn, and various conditions of the special senses are mostly SUBJECTIVE SYMPTOMS.

One of the first symptoms of diabetis is a preternatural keenness of appetite, but in most diseases the appetite is lost or impaired or perverted.

THIRST is generally great in diabetis, and there is commonly considerable thirst in inflammatory complaints.

The above named symptoms are mostly subjective, but are accompanied by others that are objective, that show that the functions of certain parts are disturbed or suspended; and it is of especial importance to notice the PULSE, as this is a valuable guide in treating disease.

Each contraction of the heart sends out a wave which distends the blood vessels, and they by their contractility or elasticity carry it on through the entire arterial system. This periodical distention is the pulse.

The PULSE BEATS can be felt wherever an artery approaches the surface; it is usually taken and counted at the wrist; in children it can be best taken at the temporal artery during sleep.

To take the pulse accurately place two or three fingers on the artery making moderate pressure, and note particularly its frequency, its regularity, its forces and its fullness.

The RATE varies with varying circumstances. The average number of pulsations in a healthy adult is from 70 to 75, but there are some persons who, when they are quite well have a pulse of 80 or 90 to the minute, and

there are others in whom it seldom rises above 60. It is usually more rapid in women than in men, is much more frequent in early life than in old age, and the average rate in a healthy child is 120.

In disease, the pulse may acquire a great degree of frequency. It may reach 150 or even 200, but in such cases it is generally feeble and can hardly be counted. Besides observing the frequency of the pulse, its character in other respects must be noted.

IRREGULARITY OF THE PULSE generally indicates disease, and there are two varieties of it. In most instances of irregular pulse, succeeding beats differ in length, force and character; in the other variety a pulsation is from time to time left out; the pulse is said to intermit.

In the DICROTIC PULSE a secondary wave or undulation can be felt. It is often met in typhoid fever, and an inexperienced person might be led to count double the number of beats.

Another important quality of the pulse is its hardness or compressibility. The hard pulse ordinarily, though not always, indicates inflammation. This hard pulse may be known by pressing pretty hard with one finger, while we observe with the others whether we arrest or abolish the pulse.

A pulse is said to be full or large if it is felt to strike a large portion of the finger; other departures from the normal standard are spoken of as soft, quick, or sharp, throbbing, bounding, thready, wiry, flickering, &c.

OF THE TEMPERATURE.

The normal standard of the temperature of a healthy person is 98.4°. There is some variation, and indeed a

daily cycle of variations, so that in the morning it is 99 or at least 98½ and in the evening 97½, but the range is small, and if the variation is more than that, it is indicative of disease. There is only a deviation of about 15° within which life can be sustained; a temperature of more than 107° or less than 93° will almost certainly prove fatal.

Every mother who can, as well as every nurse, ought to own a clinical thermometer, as thereby she may detect the beginning of a disorder before there are other marked signs of indisposition. She should use it upon the first suspicion of a departure from health and frequently afterwards, until she knows that the temperature is normal. An increase, especially if beginning each day a little earlier, is a bad indication; a decrease from a high temperature each day is a sign of improvement. In pneumonia and generally in such disorders as are initiated with a chill, the rise is sudden and rapid.

In typhoid and some other fevers, the elevation is slight at first and gradually rises. The exacerbations and remissions or other deviations can only be recognized by taking the temperature frequently, and it should be taken at the same hour each day to exhibit the cycle of changes.

An irregularity of temperature in the course of a disease that has a regular type may indicate a complication, or it may depend upon local causes, such as constipation, bad air, &c. The decline of fever and of temperature may be gradual, or it may drop to a steady normal within a few hours.

Before using the thermometer the index must be thrown down to a point below the normal. Hold it with the bulb down and shake till it falls sufficiently.

The part (the axilla) should not have been exposed for washing for at least half an hour before taking the

temperature, and it is a good precaution to keep the axilla (or mouth) closed for ten minutes before putting the bulb of the thermometer into it, and a little time may be saved by slightly warming the bulb in the hand before its introduction. If we are careful and see that the axilla is first dried from perspiration, and that the clothing is not in the way, and that the thermometer is held firmly in position a sufficient time, we may get a correct axilary temperature, unless in a very emaciated person. If taken in the mouth the lips must be closed during the process.

The rectum gives the most reliable temperature, and this method is employed for infants. The thermometer should be oiled and introduced for about two inches. Unless the presence of feces prevent, the thermometer will be half a degree higher than if taken in the axilla. It will sometimes take ten minutes or more to obtain the temperature, but some thermometers will do the work in less than five minutes.

THE RESPIRATION.

That respiration and circulation are intimately connected, and that whatever modifies the pulse usually effects the breathing is a fact generally known. That the proper performance of the function of every organ in the body depends somewhat upon proper respiration, is a fact not so generally known and recognized, and as this is an important topic we may properly here enlarge upon it.

By the muscular action of the diaphragm and intercostal muscles, and the consequent contractions and expansion of the lungs, the alternate inspirations and expirations are produced which we call breathing. The lungs are not completely filled and emptied by each respiration, and a certain amount of air remains stationary in them.

Were this air which remains stationary constantly in a particular portion of the lungs, the same without change, we would derive no benefit from that portion of the lungs. Practically, however, it is believed that the additional supply breathed in and out is diffused through and alters the character of the whole.

A healthy adult ordinarily breathes about eighteen times per minute, taking in each time about twenty inches of air. It is said that it takes at this rate sixteen respirations to completely renovate the air. This is probably true of our ordinary breathing, but the renovation of the air depends upon our manner of breathing. It is possible for us to breath so that at one expiration we almost displace the air from every portion of our lungs, and then by a full, deep, prolonged inspiration, (throwing forward the chest, throwing back the shoulder, and keeping the body erect,) fill the lungs fully with air and thus not only change the air in our lungs, but change in some degree the character of our blood so as to increase its purity.

In order to test this let me ask anyone who is suffering from any slight indisposition, if it be headache, nausea, pains in different parts of the body, or any sickness, to try to breathe in this manner for half an hour, and observe if they do not feel better, being careful at the same time that the air breathed is good and pure. This point is of so much importance that I will refer to it again hereafter.

The character of the respiration is an important diagnostic symptom and should always be noted. The rate of respiration varies as does that of the pulse, but the former is partly under the control of the will. The respirations are more rapid in women than in men, in children than in adults ; it is modified also by position,

exertion, excitement, and other conditions. We may count the respirations by observing the rise and fall of the chest, but it is well to put our hand on the stomach where the motions may be felt.

Breathing is in man mostly abdominal, in woman mostly thoracic, but inflammation in the chest or abdomen will affect its character.

DYSPNŒA, difficulty of breathing, arises when from any cause the amount of air entering the lungs does not correspond to the amount of blood sent by the heart for purification. The air may be unfit for its work, or disease in the lungs, or air passages may shut it out. Asphyxia results if the supply of air is in any way cut off.

OF THE AIR.

In this connection I will say to the nurse, give the patient pure air. Learn how indispensable this is to life, or health, or comfort; how indispensable to any person, and especially to the sick; how liable the air in the room is to be contaminated by the air breathed or expired by those in the room; by lights burning in the room; by exhalations from the bodies of the sick; by excreta left for a time in the room; by the inevitable floating dust from the floors and walls; from clothing, bedding, and furniture; and from the presence of organic matter in increased quantity, and of most deleterious quality in and around the sick.

A thousand feet of air space where the air is constantly renewed, is necessary for a healthy adult; a sick person should have two or three times as much, because with them there is increased susceptibility to draughts. Be very careful that the sick are not placed so that a direct current of air can blow on any part of the body, but

either by the use of fans or in some other way the air must be renewed around their bed.

VENTILATION.

The problem to be solved is, how can fresh, pure air be best supplied? The inequalities of temperature within and without the room produces some natural ventilation, as this sets the air in motion and effects an exchange of air, if there are some apertures around the doors and windows.

This, however, is seldom sufficient, and artificial ventilation is often necessary. An open fire is a good apparatus for this purpose. The draught which it creates carries the air from the room up the chimney, while a fresh supply is drawn in to take its place. This supply should be from the outward air, or from an adjoining room in which the air is not contaminated.

The inlets and outlets for air should be of equal capacity, on opposite sides of the room, and of different heights to secure thorough ventilation. They should be as far as possible from the patient and from each other. In cold and damp weather great care is necessary to keep the air fresh and wholesome and at the same time to avoid chilling the patient. But even in cold weather the doors and windows may be thrown open for a minute at a time, if the patient is at the time protected by additional clothing.

However, during the night and in cold and wet weather, the principal supply of air will be from an adjoining room, air that is warmed, but it should be as pure as possible. When the weather is cold, and especially the latter part of the night, have more heat in the room and not less

fresh air ; if needed give your patient additional clothing and foot warmers.

The windows may be thrown open once or twice a day in cold weather, if the patient is protected by putting additional clothing on the bed, and using some sort of a screen, (an umbrella may be used for a screen), as a protection from the cold and direct draughts. But as the contamination of the air continues, the purification of it should be equally so, and some fresh air must constantly be admitted—some device used for the purpose. The window may be raised two or three inches and the aperture closed with a board, then the air will find admittance through the opening between the two sash ; or when the window is raised three inches, a board six inches wide may be placed on the window sill a little inside of it ; thus there will be an aperture both at the top and bottom of the lower sash. Or the upper sash may be lowered a little. The current of air which comes in (this is usually the lower one) should be directed upwards.

In the summer a lamp may be kept burning in the fireplace or grate ; flues must in some way be kept heated or they will not draw. Stoves assist ventilation to some extent, but furnaces and radiators do not assist at all to ventilate, and the air is thereby especially dry. A pan of water may be kept boiling in the room, or perhaps merely setting on the stove, or a towel or two may be hung near a radiator and kept constantly wet ; these will dampen the air by evaporation, and this is often necessary when the rooms are kept warm by artificial heat. About 66° is a proper temperature for a sick room in most cases, but 60° to 65° is suitable for fever cases ; feeble and emaciated persons require a temperature of 70° to 75°.

Be careful to have the room warm when the patient is out of bed.

THE SYMPTOMS OF INFLAMMATION.

The ordinary symptoms which characterize inflammation may be known if we observe what takes place when an external part is injured. Let us suppose that a healthy man has a piece of glass stuck in his arm. He soon has pain, then redness in that part of his arm, then swelling, which is hard near the injury, and increases so that some swelling may be observed, though not so hard at a little distance, and the part is quite tender and hot.

These are the ordinary symptoms of inflammation: pain, redness, heat, and swelling, with tenderness that is manifested when the part is pressed.

If the inflammation increases there are signs of disorder in other parts of the body; the patient may be first chilly and feeble, then the skin may become hot and dry all over the body, the pulse fall hard and frequent, lassitude comes on with headache, perhaps pain in different parts of the body; he has also other symptoms of fever; is restless, sleeps ill, loses his appetite, his tongue becomes white, his mouth is dry, he is thirsty, the secretions of the body are diminished, has what is called inflammatory fever, or sympathetic fever, or pyrexia, the last term being now most generally used.

These phenomena, this inflammation, ends in two or three different ways. If measures have been taken for subduing the inflammation—in the supposed case of the arm—if the glass has been removed, it will probably happen that the symptoms above named will disappear. This is to end in what is called RESOLUTION.

When the inflammation goes on until pus is formed it is said to end in SUPPURATION. The symptoms grow more severe for several days, the swelling at length assumes a more pointed form, the skin in its centre begins

to look white, and the swelling there gets softer ; there is throbbing pain, perhaps the patient has chills or rigors ; then when the swelling is cut open or the cuticle breaks a yellow creamlike fluid is poured out which is pus, and there is generally an abatement of the symptoms. If, however, the suppuration or discharge of pus continues for some time, other symptoms are manifested such as frequent shiverings, followed by flashes of heat which end in perspiration ; this is HECTIC FEVER.

When the inflammation is still more intense it sometimes ends in MORTIFICATION, the part dies by the violence of the disease, the red color changing to a livid or purplish, or greenish black hue, the flesh losing its sensation and having an offensive odor.

Of course inflammation may be in an organ or structure that is internal, and we determine the seat of the disease, partly by the character of the pain. Sometimes the pain is sharp and piercing; this is its character generally in serous membranes such as the pleura or peritoneum (membranes covering the lungs and intestines.) There is less pain when the inflammation is in the mucous membrane, or in the parenchymatous structure of organs, such as the lungs, liver, and spleen.

There is generally an aggravation of pain upon pressing a part that is inflamed. Pain caused by air distending the bowels and stretching the nerves may be relieved by pressure. Spasmodic contractions of the muscles will cause pain without much tenderness.

OF HEAT AS A SYMPTOM OF INFLAMMATION.

The temperature of an inflamed part exceeds that which belongs to it in health. In inflammation as in fever, it has been known to rise to 107°. The increase of

heat depends upon an influx of arterial blood, and therefore of oxygen into the part. There is probably always some increase of heat, though it may not always be noticed in every case of inflammation.

There is more REDNESS than is natural in a part that is inflamed. There is more blood than usual in the vessels that carry red blood, and the red blood enters into the small vessels where the red particles cannot commonly be seen. All the minute vessels seem to be enlarged. The redness often remains sometime after the inflammation has ceased.

The degree of SWELLING in different cases depends partly on the nature and structure of the part affected and partly on the intensity of the inflammation ; in some instances there is so little that it is not appreciable.

Almost all the swelling results from the presence of matters thrown into the inflamed part. In the central hard portion the hardness is to be ascribed to an effusion into the areolar tissue of it, of a fluid which is transparent at first, afterwards becoming opaque, called coagulable lymph. Serum is effused into the areolar tissue of the softer swelling at the circumference.

ŒDEMA, DROPSY, ANASARCA.

Even under moderate inflammation some amount of effusion takes place into the texture or from the surface of a part. This effusive serous fluid called also serosity, resembles and probably is the scrum of the blood. When this passes into the areolar structure of a part it is called œdema, (though this is not always by inflammation) and if the serosity passes out extensively over the body, the disease is called anasarca or general dropsy.

If a considerable amount of this serous fluid is poured

out in a short time from the peritoneum, it is a form of ascites or abdominal dropsy. If it is thus poured into the pleura it causes apnœa, or difficulty of breathing, and requires aspirating.

CHAPTER II.

DIAGNOSIS OF DISEASES IN CHILDREN, EARLY TREATMENT, &C.

It is not often that a correct diagnosis can be made of a disease by a single symptom, but there are marked and characteristic symptoms which indicate some diseases in children with considerable certainty.

A strongly marked nasal or palate sound in the child's cry indicates an abscess behind the pharynx. When this nasal tone is heard we should palpate with the finger on the throat to ascertain the degree of soreness.

A long drawn, ten times lengthened, loud sounding expiration with normal inspiration, and no dyspnœa is sufficient for the diagnosis of CHOREA MAJOR (St. Vitus dance.)

A high thoracic continually sighing inspiration, the upper part of the thorax doing the work of breathing, and with a sighing or groaning sound, shows the commencement of HEART WEAKNESS, CARDIAC PARALYSIS OR FATTY DEGENERATION OF THE HEART, and will probably be followed by such symptoms as cyanosis, coldness of the extremities, &c.

Strongly marked diaphragmatic expiration accompanied by a fine, high whistling sound, points to BRONCHIAL ASTHMA. This sound, however, resembles that made in

croup. If there is a pause between the end of expiration and the beginning of inspiration, croup may be excluded.

Sleepiness, lasting twenty-four to thirty-six hours, occurring without fever or other disturbance to account for it, is an initial symptom of MENINGITIS, though it might be caused by narcotics or uremia.

A prominent, firm fontenelle means increase in quantity of the contents of the cranium-exudation of some sort. It cannot be caused by fullness of the vessels alone if it is firm and resisting. We know that we have cerebral disease with DROPSY or exudation (Hydrocephalus).

When the fontanelle is deeply sunken, it points to loss of blood or other nutritive juices, as in cholera, &c.

A sharp, shrill cry, accompanied by an expression of fright or great anxiety, and occurring about an hour after the child has fallen asleep, is the only symptom of the "ALP"—night terrors, sudden awaking from bad dreams.

Periodical crying, lasting from five to ten minutes, should always make us think of spasm of the bladder or PAINFUL URINATIONS.

Violent crying at stool with fear of the act, and general avoidance of it, points to FISSURE OF THE ANUS, and is usually accompanied with constipation.

A violent cry full of pain and almost continuous, with the throwing about of the head on the pillow and grasping it with the hands, means OTITIS or EARACHE.

Weakness or immobility of the child, after a comparatively slight or short illness, points to SPINAL PARALYSIS.

Delayed ossification of the cranial bones is an early sign of RICKETS, as is crying continued for weeks (increased on touch of the extremities), accompanied with fever and incessant sweating.

Vomiting of all kinds of food continued for weeks in

children of closed cranium but with large cranial measurements, when there is no fever, pain, idiopathic disease, or a cerebral tumor, indicates chronic HYDROCEPHALUS with an acute onset.

Congestion of the cheeks in children, excepting in cases of cachexia and chronic disease, indicates an INFLAMMATION or a febrile condition.

Congestion of the face, ears and forehead of short duration, strabismus with febrile reaction, oscillation of the iris, irregularity of the pupil with falling of the upper lids, indicates a brain affection.

Enlargement of the spongy portions of the bones indicates RICKETS.

A thick and purulent secretion between the eyelids may indicate great PROSTRATION of the general powers.

Passive congestion of the conjunctival vessels indicates approaching DEATH.

Long continued lividity, as well as lividity produced by excitement or exercise, the respirations continuing normal, are indices of FAULT IN THE FORMATION OF THE HEART, or great blood vessels.

A temporary lividity indicates the existence of a grave acute disease, especially of the respiratory organs.

Irregular muscular movements, which are partly under the control of the will, indicates the existence of CHOREA (St. Vitus dance).

The contraction of the eyebrows, together with a turning of the head and eyes to avert the light, is a sign of cephalalgia (headache).

When the child holds its hand upon its head, or strives to rest the head upon the bosom of the mother or nurse, it may be suffering from ear disease.

When the fingers are carried to the mouth, and there is

besides great agitation apparent, and when it turns its head from one side to another, there is probably some obstruction or some abnormal condition of the larynx.

A feeble and plaintive cry indicates a trouble in the abdominal regions.

If the respiration is intermittent but accelerated, there is capillary bronchitis. In bronchitis the cough is clear and distinct.

A hoarse and rough cough is indicative of true CROUP. When the cough is suppressed and painful, there is PNEUMONIA OR PLEURISY.

In diseases of the stomach, liver or bowels we have usually a coated tongue; a white tongue indicates FEBRILE disturbance or some THROAT trouble; a brown moist tongue, INDIGESTION; a brown dry tongue, DEPRESSION, BLOOD POISONING OR TYPHOID FEVER; a red moist tongue, INFLAMMATORY FEVER; a broad, pale flabby tongue accompanies a DROPSICAL CONDITION of the system; a tremulous, moist and flabby tongue indicates FEEBLENESS, NERVOUSNESS; a pale flabby tongue which shows the pressure of the teeth, a generally relaxed condition of the system; the irritable or strawberry tongue with its red papilla, points to an irritated stomach, and is met with in SCARLET FEVER; a furred and dry tongue is indicative of VIOLENT LOCAL INFLAMMATION; if afterwards clean, red and dry, protracted INFLAMMATORY FEVER.

Wheezing cough and wheezing breathing indicates ASTHMA; dull, heavy aching pain at the base of the chest, ACUTE BRONCHITIS; urgent desire to go to stool, DYSENTERY; diminished secretion of urine, INFLAMMATORY and FEBRILE DISORDERS; cold hands and feet, NERVOUS DISEASES and low states of the blood.

In general, the diagnosis of diseases of children is easy

if we simply compare the objective symptoms with those which should obtain in a healthy child of the same age. But we must remember that with children symptoms which appear very grave are often evanescent, and on the other hand the indications of very serious disease may be disregarded on account of their natural vivacity and recuperative powers. In each case each child should be studied by itself considering its antecedents, its peculiarities, its surroundings, and its relations to them.

The mother has the best chance to know these; she sees the child when awake and asleep, when dressed and undressed; she knows its history, what has been its diet, what her own health has been, her own habits, her surroundings and occupations, and whether there may or may not have been anything to cause sickness of the child in her own toils or trials. The nurse and the mother should note all the facts, for their own guidance and for the guidance of the physician if he is called.

EARLY TREATMENT OF INFANTILE DISEASES.

Very few of the symptoms heretofore mentioned can be neglected with impunity. While some cases of sickness may be left to the powers of nature to restore health, others require judicious early treatment, and a physician should be called. We should generally enjoin rest, but we should act by our medicines to meet every positive indication.

We are the assistants of nature; we must act by removing the causes where they can be reached; we must relieve pain, but we must not by officious kindness do too much and interfere with the natural return to health. Remember that drugs are not all powerful, that time, rest, diet and numberless little things are the means by which we aid in the fight against disease.

It is an excellent plan not to continue medicine too long. Place the child on the road to health and see if it will not with a little supervision improve—still, however, using proper rest, diet, &c.

But as the apparently trifling symptoms of to-day may become the full fledged attack of to-morrow, we must pay attention to every untoward symptom. Parents are liable to be unnecessarily scared, and afterwards go to the other extreme and neglect calling a physician until serious injury has occurred.

I will here give you a few aphorism and general rules: Treatment of the sick should be according to the patient as well as according to the disease. Adult males are not so sensitive as females; young children, whether male or female, are sensitive, tender and excitable, and alive to every irritation. But young children differ in their constitution, and some have peculiarities or idiosyncracies so that medicines of ordinary activity act very powerfully or even violently.

Small children are always sensitive to the action of medicine, and small doses only are required for them. And in consequence of the activity of the vital powers, and the quickness and force of the circulation, there is a remarkable susceptibility to inflammatory action, disease sometimes running on rapidly to organic and incurable mischief.

In treating children employ the mildest remedies at first, and aid their action by regimen. When an emergency demands, use those articles which experience has shown to have power to meet such an emergency. Exhibit such medicine in the minimum dose and increase or repeat until the desired effect is produced. Be very careful not to fill the child with nostrums for some imaginary

ill, lest you thereby make it ill. Always remember that the first step in treatment is to change the conditions which produced the disease—remove the cause and assist nature to repair the injury.

CHAPTER IV.

TREATMENT OF INFLAMMATION IN ITS INCIPIENT STAGES.

Usually the nurse or the mother does not treat disease, or administer medicine except under the direction of a physician, and it is not always necessary for her to know the principles that guide in their administration, or why particular medicines are given. But it is sometimes necessary for the nurse or mother to decide what shall be done, and to act before the doctor can be consulted. Accidents and emergencies occur, distress and sickness may suddenly attack some member of a family at any time, and little ailments are complained of every day by some of them; the question arises, what shall be done?

It is not necessary every time to send for the physician, and he cannot at a moment's notice be obtained. For many ailments the mother prescribes, and many times the early and judicious use of medicines or regimen not only relieves present suffering, but also prevents the developement of serious, and protracted and dangerous maladies. This is especially true in regard to incipient inflammation, and I shall here speak particularly of its treatment.

What has heretofore been said about inflammation gives us some guide to enable us to know whether the case calling for our care is one of an inflammatory character. If the pulse is full and hard and a little more

frequent than usual, and there is restlessness and some pain we may conclude that there is IRRITATION that precedes inflammation at least, before such symptoms as depression, chilliness followed by heat, headache, a furred tongue, loss of appetite, and apparent weakness come on. But if any of these symptoms are present we should search for the cause. Perhaps if the inflammation is external we shall be able to ascertain what produces the trouble. In every case we ought to know the cause if possible, as we thus have more clear indications for treatment.

But we may use the sedative treatment in all cases where these symptoms come on in a person who has previously been healthy. Of course you will not bleed—that, if done at all, should be done by the doctor. But all sources of irritation ought to be removed, so that the patient may enjoy perfect quiet; the sick room should be ventilated, and kept at the temperature of about 60°; let the diet be light; allow ice and cold water freely, and if there is much febrile excitement use sedatives and saline refrigerants. The best sedative is veratrum viride, and the following is a convenient way of administering it: Drop 30 drops of the fluid extract of veratrum in 30 teaspoonfuls of water and give 1 teaspoonful every two hours. To adult subjects if there is considerable fever two drops of the extract, or two teaspoonfuls of the diluted preparation may be given at first and the dose may be repeated in an hour, but it will not be best to continue such large doses. Aperients may be given if there are fecal accumulations in the bowels. Although quinine is a tonic, six to ten grains of it are sometimes given with good effect in a case of inflammation.

Opium is a good remedy judiciously given; one dose

(1 grain for an adult) is good in a case of catarrh or cold; successive doses are necessary in a case of peritonitis or enteritis, but this should be given on a physician's advice. It acts probably by quieting the nerves—by sustaining the faltering action of the heart, and by keeping the inflamed part at rest. Sometimes cold, and sometimes hot applications are made to inflamed parts, and it is said that the sensations of the patient are the best criterion of their usefulness. Except, however, in cases of inflammation of the brain, and perhaps even then, I think that hot applications are the best. When we wish to promote suppuration hot fomentations should be applied.

COUNTER IRRITANTS relieve inflammation of the deeper parts by drawing the circulating fluid and the nervous energy to the surface. The milder kinds called rubefacients, produce merely local warmth and redness; these may often be used advantageously. Mustard applied so as to redden the skin is generally useful.

VESICANTS, epispastics, or blistering agents are safe appliances but they are distressing, and their use may be deferred until a physician advises them.

I have said that the diet should be light while the pulse is hard and full. Afterwards when the pulse is natural, or if it becomes irregular or small, good broths or other nutrients are to be given, milk, cream, and even raw eggs may be administered. In general food should not be pressed upon a patient.

OF TOPICAL APPLICATIONS FOR INFLAMMATION,

I have mentioned counter irritants and I think it best at this time to advert to all the various topical applications, irritating, soothing and protective, and to give such instructions as I can in regard to them.

Counter irritants are frequently applied over or near the seat of the disease, and often also at a remote part to obtain what is called revulsive action. In both instances, however, their action may be revulsive. If applied to the thorax or chest, for example in a case of pneumonia, the cuticle to which it is applied is almost as remote from the lung by the way of the circulation, as is the cuticle of the wrist or ankle. But practically a sinapism may be very useful applied at either place—possibly more useful if applied over the seat of the inflammation, because there is a sympathy between the parts—they may be used very beneficially in domestic medication.

In a few succeeding pages I give some directions to the nurse who acts under the doctor's orders.

AMMONIACAL LINIMENTS, and other washes and embrocations that are sufficiently irritating to produce redness when rubbed on the skin, should be rubbed on briskly so as to produce considerably increased circulation in the capillaries, &c. One of the most commonly used rubefacients is mustard. To make a mustard plaster, or sinapism, take one part of powdered mustard, and about three times the quantity of flour and mix into a paste with tepid water, and spread it evenly between two pieces of thin muslin. As hot water or vinegar weakens the active principle of mustard, tepid water is best, even if it seems cold when applied to the patient. Good sinapisms are conveniently made also by doubling brown paper several thicknesses, wetting it and sprinkling on the mustard alone.

The mustard must not be left on long enough to vesicate ; usually it should be taken off within half an hour (or moved,) except when applied to the soles of the feet, when they may commonly be left on for several hours.

Their action must be carefully watched upon an insensible or delirious patient, or a little child. In mixing the plaster for children glycerine may be used, and then the plaster may remain on longer. Confine in place by a bandage. If the patient complain of the burning or smarting after the plaster is removed, dust the part with starch or fine flour, or dress with vaseline to exclude the air.

You may make a cayenne pepper plaster in the same way that a mustard plaster is made, or you may sprinkle pepper upon a thin slice of pork. This makes good draughts for children and may be useful sometimes for sore throat if applied to the neck. But capsicum plasters, &c., can be bought at the drug store. In the country it is generally convenient to obtain and apply horse radish leaves ; these are good rubefacients. In order to produce immediate VESICATION I have known a doctor to heat an iron spoon until it was sufficiently hot, and then rub it over a small space of skin ; and a small blister may be quickly made by saturating a bit of cotton with hartshorn, putting it in a top thimble and applying it to the skin to remain seven or eight minutes. But the agent most commonly used to produce vesication is the CANTHARIDEAL PLASTER. If you are to produce a blister with this, the part should first be washed and dried, shaved if there is any hair upon it, then if you wish the blister to rise soon wet the plaster and also the skin with vinegar ; apply, and secure the plaster in place by a bandage. Most commonly it will rise in from four to eight hours, but without waiting for it to rise fully you may remove the plaster and apply a poultice which will produce the desired effect. Do not tear the skin in taking the plaster off. When the blister is well raised make a slight incision or two for the escape of serum, and dress with vaseline or tallow. This

is the usual way, but in some cases the physician may direct differently, perhaps may leave the blister undisturbed and allow the fluid to be reabsorbed.

Strangury and congestion of the kidneys sometimes follow the prolonged use of cantharides; to prevent this, it is sometimes recommended that tissue paper be well oiled and interposed between the plaster and skin. And as camphor corrects the action of cantharides upon the bladder, it is recommended that in case of a child particularly, a solution of camphor in ether be sprinkled upon the plaster. If a blister is applied to a young child, it should be carefully watched and not allowed to remain too long. In two or three hours the skin will be well reddened, and the plaster may be removed and a poultice applied.

TINCTURE OF IODINE is sometimes applied as a counter irritant, but several coats and repeated applications are necessary to produce a blister.

Local stimulation can be obtained from bits of cantharideal plaster kept on for an hour or two, and removed or changed before the point of vesication is reached. The same effect follows the rapid passage of a hot flat iron over a piece of brown paper or flannel laid upon the skin. It is generally best that the flannel should be wet first; and should an emergency arise when from hemorrhage or some other cause there is danger of immediate collapse, the application of heat in this way may rouse the sufferer and prevent immediate death. This or the actual cautery is sometimes used to relieve lumbago, or rheumatism. If you have thereby a slight burn, you may dress it in a solution of bicarbonate of soda and cover from air with rubber tissue.

If a SETON is inserted in the skin, the silk should be moved daily and the matter well cleared out.

WET CUPS are applied to relieve congestion and to abstract blood, the skin being first scarified.

DRY CUPPING is most practiced for the relief of pain and to draw the blood away from an inflamed organ. Small tumblers may be used in the absence of cupping glasses, if the edges are smooth. When you apply the cups have at hand also a lamp, a saucer of alcohol, a bit of sponge or a wad of lint fastened to the end of a stick. Have the cups perfectly dry, dip the sponge in the alcohol which you will ignite from the lamp, (they being near the patient), and let it burn for an instant in the inverted glass, then withdraw and extinguish it, and rapidly place the cup over the intended spot. As the heated air in the glass condenses in cooling, the skin will be forcibly sucked up, and the blood drawn towards the surface. Each cup will remain on from three to five minutes. Do not attempt to apply them to a bony and irregular surface, and be very careful not to burn the patient by getting the edges of the glass too hot. To remove the cup press with the finger close to the cup so that air will be admitted.

WET CUPPING will be attended to by the physician, who will provide the scarificator, and adhesive straps. See that plenty of soft towels are provided.

There are two varieties of LEECHES used in this country, the American and the foreign. The latter differs from the former in having five or six stripes down its back instead of three, and it will draw from five to six times its own weight of blood as it is larger and more voracious than the American variety.

The domestic variety is sometimes preferred for chil-

dren, as it will draw a sufficient amount of blood usually. Leeches should not be applied over any large vessel, and preferably should be over a bony surface where pressure can be made to stop the blood if it continues to run. The leech should not be handled, it may be washed and dried in the folds of a towel.

To induce them to bite, the part to which they are to be applied must be perfectly clean, and it may be best to pick or scratch the skin so that the leech has first a taste of blood; or you may put the leech in a wine glass, test tube, leech glass, or small bottle filled with water; cover with a cord and invert over the place; hold it close and slip out the paper. The leech will then probably take hold and the glass can be taken off, and the water absorbed by a towel. If one is to be applied inside the mouth or nostril, put a thread through its tail to prevent its being swallowed. If such an accident should occur have the patient drink freely of salt and water, and induce vomiting.

If the leech seems sluggish when applied stroke it gently with a dry towel. When full it will drop off. If you wish to take them off sooner, do not remove by force, but put a little salt on their heads. If the bleeding from the orifice continues too long it may be checked by a compress of lint, an application of ice, or by touching with nitrate of silver, or carbolic acid. Leeches not used may be kept in a jar of water with sand in the bottom, and a perforated cover, or it may be covered with a linen cloth. The water in which they are kept should be changed twice a week in winter and oftener in summer. Salt will make a leech disgorge the blood with which it is filled, but if kept afterwards it is liable to be diseased, and to cause disease in those that are with it.

By FOMENTATIONS or stupes is commonly meant the application of flannels or towels wet with hot water or some medicinal decoction. If hot water only is used, they are a convenient means of applying warmth and moisture, but they require constant attention, needing to be changed every ten or fifteen minutes. They are chiefly of use in relieving pain and inflammation, and in promoting supuration when that is desirable.

Two pieces of flannel should be at hand each doubled to the desired size ; they are to be saturated with boiling water and wrung out dry as possible. To wring it out without scalding one's fingers, put it inside a towel, and this may be made with a hem at the end so that a stick can be thrust through it. Wring the flannel so dry that it will not make the bed or bed clothing wet. Cover with oiled muslin a little larger than the fomentation, and over that lay some dry flannel or cotton. If the stupe is put on hot, and frequently changed, it derives or draws blood towards the skin, and is often useful in relieving spasm and pain ; and the continued use of them prevents suppuration. Medicaments are sometimes added to make them more irritant or sedative ; then they are not changed so often, but they must not be allowed to get cold. After the fomentations are discontinued, carefully wipe the parts dry to which they have been applied, and cover with a warm, dry flannel.

I subjoin a few useful fomentations in which decoctions or medicines are used.

1. Add one ounce muriate of ammonia and two ounces spirits of camphor to 1 quart of boiling water just before dipping the flannel into it.

2. For a fomentation to the bowels, chest, &c., of a

child, take 1 oz. paragoric, 1 oz. Jamaica ginger, and 4 ozs. hot water.

3. Twenty drops spirits turpentine may be sprinkled over each stupe, but be careful about blistering the skin or making a sore.

4. A decoction of chamomile flowers, hops, or conium, may be used for the fomentation instead of water.

5. Twenty drops or more of laudanum may be dropped over each stupe. This might soothe pain without causing stupor.

POULTICES, like stupes, are means of applying warmth and moisture. If applied early, it is believed they may prevent the formation of pus, as they bring about a resolution of the inflammation. When suppuration has commenced they facilitate the passage of matter to the surface, and lessen the extent of the disease. When applied to an inflamed part or swelling they should extend over considerable surrounding surface, but for a suppurating wound they should be but little larger than the opening.

Avoid putting them on very hot in a case of paralysis and also upon children, though they should be applied quite hot usually.

To make BREAD POULTICES pour boiling water on slices of bread without crust, simmer a few minutes, then beat up the bread quickly and spread it upon a piece of muslin previously cut of the desired size, leaving about two inches of margin upon each side. Then put on the poultice some lard or oil or vaseline to keep it from getting dry and hard, and to make it less likely to stick. It will be well to put on it a cover of thin muslin or mosquito netting, or tulle, or illusion, and then fold over like a broad hem the edges of both the covers. The poultice should be evenly spread about a quarter of inch in thick-

ness and may be carried to the patient on a small tray or board, and if you are changing the poultice you should also have a small basin to carry away the old ones. After applying the poultice cover with some impervious material (oiled muslin or rubber cloth) to keep in the heat. Such a poultice as this will keep warm for five or six hours, but it should not be allowed to become cold and hard. Milk should not be used in making poultices as it quickly sours.

POULTICES ARE MADE OF VARIOUS MATERIALS. Flax seed meal, starch, powdered slippery elm, Indian meal, and oat meal are used. They should all be made of such a consistence that they will be tenacious as possible, and should have at least a little oil on them to prevent their getting dry.

For PUTRID SORES some disinfectant solution may be used instead of water in making the poultice, such as a weak solution of chlorinated soda.

YEAST POULTICES are used to hasten the separation of gangrenous sloughs. Mix six ounces of yeast with the same quantity of water at blood heat. Stir in fourteen ounces of wheat flour and let it stand near the fire until it rises. Apply while fermenting, or, "Take of wheat flour a pound, yeast half a pint, mix, and expose the mixture to a gentle heat until it begins to rise."

The following are old officinal forms for poultices:

ALUM CATAPLASM. Take the whites of two eggs, of alum a drachm, shake them together so as to form a coagulum. (A common mode of preparing the alum poultices is to rub the whites of two eggs briskly in a saucer with a lump of alum till the liquid coagulates.) The curd produced by coagulated milk with alum is sometimes used as a substitute. The alum cataplasm is sometimes

employed in incipient or chronic opthalmia as an astringent application. It is placed over the eye enveloped in folds of cambric or soft linen.

CATAPLASM CARBONIS LIGNI. Take a sufficient quantity of wood charcoal red hot from the fire, and having extinguished it by sprinkling dry sand over it, reduce it to very fine powder and incorporate in the simple cataplasm in a tepid state. Charcoal recently prepared has the property of absorbing those principles upon which the offensive odor of putrefying, animal substance depends. In the form of poultice it is an excellent application to foul and gangrenous ulcers, correcting their fetor and improving the condition of the sore. It should be frequently renewed.

CONIUM CATAPLASM. Take of extract of poison hemlock (conium) two ounces, water a pint. Mix and add of bruised flax seed sufficient to produce a proper consistence. This cataplasm may be advantageously employed as an anodyne in cancerous, scrofulous, and other painful ulcers, but its liability to produce narcotic effects in consequence of the absorption of the active principle of the hemlock must not be overlooked.

Sometimes a bag is made to contain a poultice, and such a bag should be used if we desire to apply a large poultice to the chest or abdomen. One can be made for the breast and for the back at the same time, and two straps over the shoulder may unite them. A hop poultice is a thin bag loosely filled with hops and wrung out of hot water.

DRY FOMENTATIONS are sometimes employed. Thin bags filled with heated sand, ashes, salt, bran, or hops are used, to keep the heat applied to the skin; and to warm the feet and quicken the circulation in the extremities,

hot bricks, bottles filled with water, &c., are applied. These should be rolled in hot flannel or at least enveloped in something.

OF THE APPLICATION OF COLD.

Cold applications are sometimes used to subdue inflammation in the early stages. They are not good when matter is forming, or during sloughing. When they are used they ought to be continuously applied so as to keep up a constant cooling effect. Sometimes either water or some lotion is used with the design of cooling by evaporation. If a part is wet with water, alcohol, vinegar, a solution of muriate of ammonia, or other fluid, and left uncovered, the effect will be to cool it. When you design to cool by evaporation do not lay on more than one thickness of muslin or lint, and this must be wet so often that it does not get nearly dry. But a part may be cooled by several folds of muslin wet in ice water, and changed for fresh ones before they get warm. It is important that they do not become warm, and hence they should be frequently changed; alternate cooling and reaction is hurtful rather than beneficial. A steady cold stream of water is one means of cooling, and another device is to carry across a part a long strip of muslin or lamp wicking, having one end in a vessel of cold water higher than the bed, and the other leading to a basin below it. Protect the bed well with India rubber cloth so that both the patient's clothing and the bed are kept dry.

Rubber bags are made to contain ice, and these are made in different shapes to be adapted to different parts of the body. They should not be more than half filled, and as soon as the ice melts the supply must be renewed. The ice used should be finely broken; this may be done

by wrapping it in a fine cloth and pounding it. If mixed with one-third saw dust the ice will keep longer. A fold of muslin should be interposed between the ice bag and the skin, and they should be kept in their place by a bandage or some other means. An ice bladder for application to the head can be kept from pressing on the head by being folded in a napkin, which may be attached to the pillow by a pin. A cup shaped sponge may answer in the place of the ice cap to contain the ice ; this must be wrung out before it is saturated, so that the pillow may not become wet.

COLLYRIA are best applied to the eye at the outer angle ; a glass dropper or a camel's hair pencil may be used—this same one should be used for nothing else. Draw down the lower lid, and tell the patient to look up at the same time that the drop of eyewater is slid in. Do not leave moist cloths bound upon the eye as they become hot and may do harm.

If you rub in liniment with your hand, wash the hand carefully before touching a sensitive spot, as some of the ingredients may cause smarting or other injury.

CHAPTER VII.

DUTIES OF THE NURSE IN VARIOUS CIRCUMSTANCES, CONTAGION, DEATH, &C.

The fact that certain diseases are contagious is one that throws some grave responsibilities upon the nurse, and on account of the importance of the subject, I will here discuss it in the light of modern science.

Infectious diseases are supposed to be propagated by the agency of minute living parasites given off from the body of the sick and conveying the specific virus. The germ thereby includes this for the cause of all the zymotic diseases—diseases that are contagious and produced by some morbid principle or germs acting on the system like a ferment. They are claimed to be a vegetable growth of a fungoid nature, and the theory is that during the process or period of each—a period of growth like mildew—the victim is a sufferer from a more or less violent fever; that the period varies; in typhoid it is twenty-one days, in other forms of fever perhaps a shorter time, till the microscopic fungoid growth may be said to effloresce and shed its spores. Some diseases also that are not contagious are believed to be caused by organisms in the air. There are various kinds; monads, bacteria, vibriones, &c., are among the substances found in the atmosphere of a large city, and elsewhere.

A very great variety of these forms called fungoid growth have been seen and distinguished, and it is demonstrated clearly that certain forms cause certain diseases.

For example, cholera or choleraic symptoms have been induced in animals by the introduction of the cholera bicillus into their intestines, and almost invariably the dead animals showed a great abundance of the characteristic bacillus in the intestinal tract. The diseases which are now known or believed to be caused by such virus are very numerous, and directions for preventing a disease from spreading are based upon this theory; epidemic and endemic diseases are generally attributed to such a cause. The list of germ diseases is about as extensive as the list of contagious diseases.

EPIDEMIC DISEASES are those that act upon numbers of people at the same time. Probably there is generally, though not always, disease organisms diffused through the air.

ENDEMIC DISEASES are confined to particular localities. Sporadic cases of disease are those occurring singly, or scattered considerably.

DISINFECTANTS are such substances as act upon the specific germs or minute living particles to destroy them. ANTISEPTICS are such as prevent decomposition or putrifaction.

SEPTIC GERMS are generally destroyed when widely diffused in the air. It is believed that oxygen acts as a disinfectant, at least dry air is not favorable to their growth. A dry heat of 300 degrees will destroy them, and they are generally killed by a freezing temperature. Against communicable diseases the chlorine class of antiseptics including iodine, iodoform, bromine, and sulphur are the most effectual, and chlorine and sulphuric acid may without danger be used in the sick room to a sufficient extent to do some good.

The most rapid and powerful of the disinfectants is the

solution of the bichloride of mercury (corrosive sublimate). The solution most commonly used is of the strength of fifteen grains to the quart. It can be applied directly to floors, beds, walls, sinks, drains, vessels, &c.

For clothing use a solution of common salt and sulphate of zinc, two ounces of the salt and four ounces of the sulphate to a gallon of hot water ; soak the clothes in this and then boil them in water with borax, or soap or soda.

When a disease is known to be very contagious and dangerous, especial care is necessary to avoid contact on the part of patients and nurses with outsiders. All supurfluous things must be taken out of the room before the patient is put into it, and care will be necessary continually to make the quarantine effectual. Every article carried out of the sick room must be disinfected ; a set of dishes should be kept for the patient's exclusive use, washed only by the nurse ; the bedding, clothing, &c., must be washed by the nurses themselves, after being soaked in a disinfecting solution ; dressings and other cloths, such as old cloths used for handkerchiefs, may be burned ; all excrementitious and vomited matter must be disinfected ; the broom that is used to sweep the room must not be used elsewhere ; no current of air must be permitted to pass from the sick room to the rest of the house ; and it is well also to hang about the room cloths wet with some disinfectant solution ; hang over the doorway a sheet similarly disinfected ; and the nurse should cover her head with a close cap.

Lest the confinement and isolation make the nurse sick she must take care of her own health. Two nurses should be employed for every such case, so that neither may be obliged to sleep in the same room with the patient, and

each should change her clothes and go out of doors for a time every day and take a brisk walk in the open air.

The ventilation is of especial importance in contagious diseases, as no disinfection can render the air entirely pure. To prevent the infectious particles that are thrown off the skin in cases like small pox and scarlet fever, from polluting the air of the room, the clothes should be frequently changed, and the patient's body be washed and anointed with some ointment.

Charcoal placed about the room in shallow vessels does some good by means of its property of absorbing gas; and solutions of carbolic acid, chloride of lime, soda, and zinc are germicides, but the chief use of the carbolic acid family is where suppuration is going on, to prevent the spread of septic infection. It is also a means of disinfection perhaps, if the spray is used in malarial disease. Condy's fluid and sulphate of iron are used as antiseptics, but these stain clothing.

Chlorine should not be used with sulphuric acid, or carbolic acid.

Either copperas or chloride of lime may be thrown dry into water closets. A little disinfectant should be kept standing in all sputa cups, urinals, and bedpans, and in cases of typhoid, and cholera, the stools must be carefully disinfected. These diseases are not only directly infectious, but the germs in the discharges may multiply and spread the disease. Cover the bottom of receiving vessels for stools with copperas or chloride of lime, and after use add crude hydrochloric or sulphuric acids in quantity equal to half the bulk of the discharge. Cover closely and carry from the room, and empty into a trench prepared to receive them, at a distance from the water sup-

ply, and all clothing and bedding soiled by the discharges must be disinfected and boiled.

After a case is ended the room must be subjected to a cleaning and fumigation. Everything that can be so treated should be either boiled or subjected to a heat of 220° in a disinfecting oven. Rubber sheets and aprons may be cleaned with bichloride solution, and the floors, woodwork, and perhaps the walls should also be washed with a solution of bichloride of murcury. While the room is being fumigated, drawers and closets should be open and things not thoroughly disinfected should be hung up in it. A good way to fumigate the room is to burn sulphur in it, but you may evolve chlorine from common salt in the following way : Mix an equal bulk of common salt and black oxide of manganese in a shallow earthen dish, add two pints of sulphuric acid previously diluted with two pints of water, and stir with a stick. It is best in using this to have also steam in the room.

To fumigate a room have the doors, windows, and fireplace closed, and paste paper carefully over the cracks. If sulphur is used put it in iron pans, allowing two pounds to every thousand cubic feet of space ; set the pans on brick, so that they will not burn the floor ; pour a little alcohol on the sulphur and ignite, then leave the room quickly so that you do not breathe the gas ; paste up the door when you go out ; keep it closed for twenty-four hours, then open all the windows and let the room air.

Those directing the disinfection should always remember the bleaching and corroding power of chlorine and sulphurous acid gas.

When a patient has died from any infectious disease the body should be washed in some disinfectant solution,

or soap should be used containing bichloride of mercury, and a sheet should be wrapped around the body wet with the same. Saturate also a large wad of cotton with it and leave it under the hips. The burial should be soon and private in these cases.

OF THE NURSE'S DUTIES IN CARING FOR THE DYING AND DEAD.

Certain duties devolve upon the nurse in cases of DEATH from any disease, and I prefer to refer to those duties here.

Among the signs that indicate approaching dissolution are a peculiar sharpness of the features; coldness of the toes, fingers and nose; a dusky shade about the finger nails; cold perspiration, restlessness, and muscular twitchings or stupor. When you are sure that the end is near it is best that the friends should be informed. While there is slight grounds for hope do not give up all efforts, but do not disturb the dying by useless ministrations. Note the exact time at which death takes place; this is usually, though not always, obvious.

There may be a rise of temperature, and the body be quite warm a short time after death; this is produced by chemical changes, but after a short time its temperature corresponds with that of the room in which it is lying. Then the peculiar stiffening of the muscles called RIGOR MORTIS sets in which lasts for a time and then disappears. Before rigor mortis comes on prepare the body for burial by washing it (using a weak solution of chlorinated soda or carbolic acid), closing the eyes, arranging the lips naturally, and combing the hair. Bandage the jaws closely, stuff all the orifices of the body with absorbent cotton to prevent discharges, and bind a cloth around the

hips. A clean night dress or shroud or any other clothing desired can be over this, then cover the face and all with a sheet.

The arrangements can be put in the hands of an undertaker, but it is quite likely the friends will wish you to superintend them. If the body is to be kept for several days it must be packed in ice, and after twenty-four hours the face has a more natural appearance. The dark discoloration of the skin observable a few hours after death on the neck and sides and more dependent parts, is caused not by mortification, but by the blood settling or gravitating downwards. Slight discolorations about the face can be made less conspicuous by dusting them with toilet powder.

After the body has been taken from the house, the bedding must be sent out to be disinfected, all the appliances of sickness removed, the room put in order, and the windows left wide open for several hours.

SOME GENERAL LESSONS IN NURSING.

Rule 1. Do not get out of temper, but try to make the sick chamber the pleasantest and yet the quietest room in the house. Do not appear anxious however great your anxiety.

2. Do not converse in whispers; invalids generally are suspicious and will imagine all sorts of things if they see their friends conversing in this manner.

3. Do not urge the invalid to eat and drink when she does not feel like it.

4. Do not ask a convalescent if she would like this or that to eat and drink, but prepare the delicacies and present them in a tempting way.

5. Do not allow the nauseating medicine bottles to stand in the sight of the patient.

6. Study all the peculiarities of your patients, and instead of opposing them by arguments or otherwise, humor them whenever they do not interfere with the physician's orders or instructions.

7. In all cases keep everything that is used by the patient perfectly clean.

8. If the patient is not allowed to drink as much as she desires, give her the limited quantity instead of a full glass. If she is allowed to drain the glass she will probably be satisfied.

9. Do not allow flowers or plants to remain in the room over night, and always remove flowers from the sick chamber as soon as they become stale.

10. In all cases the patient should have baths so often that the skin is kept clean, and the pores are not stopped up.

11. Take care not to chill or fatigue a patient while bathing. A sponge bath can be given in bed, the bed being protected by an extra draw sheet.

12. The mouth should be often washed and the teeth brushed or wiped off with a soft cloth.

13. The hair should be combed at least once daily. The ladies' hair is braided or twisted on top of the head so that she will not have to lie on a knot.

14. Do not light a sick room at night by means of a jet of gas burning low.

15. Preferably use sperm candles.

16. Do not have the temperature of the sick room much above 60°.

17. Do not allow offensive matters to remain; but in a case of emergency where these cannot be removed at

once, you can wring a heavy cloth out of cold water and use as a cover, placing over this ordinary paper.

18. Do not neglect during the day to attend to necessaries for the night, that the rest of the patient and family be not disturbed.

19. To avoid making a noise by throwing coals on the fire, place it in paper bags and lay them on the fire.

20. Do not lean or sit upon the bed, if this is disagreeable to the patient.

21. Always remember that nothing which contributes to the welfare of those who require the nurse's care, is too trivial to demand her attention.

22. The following may by some be called little matters, but attention to them will add materially to the well being of the sick: Refrain from constant enquiries of patients as to how they feel, for sick people are easily annoyed; anticipate the wants of your patient if possible; never tiptoe about the room; if the patient is very sick have the courage to tell the friends who call that the invalid cannot see friends, if able to see them their stay must not be prolonged; do not allow a patient to sit up in bed without covering the shoulders with some light wrap; support them properly with pillows, or a chair and pillows; when obliged to leave the room take something with you which is no longer needed, and bring back necessary articles, thus saving annoyance to the patient and labor to yourself.

23. To avoid mistakes in giving medicine it is a good rule to always read the label before and after measuring the dose; no medicine should ever be given in the dark; tie a ribbon on bottles that contain remedies for external use; shake a bottle before opening it; do not leave a bottle uncorked; generally keep medicines in a

dark closet which is cool as possible; have every medicine that is dangerous taken internally labeled "poison"; keep them under lock and key.

24. The nurse should know the ordinary doses of medicines and the symptoms of overdosing. Every unusual and inordinate action of a drug may be a good reason for omitting a dose or two till the physician is seen and new directions are given, otherwise be always regular and prompt in the administration of medicines.

25. But in general the nurse can best display her knowledge and exercise her skill by faithfully carrying out the instructions she has received from the physician. If the directions are not what she would expect, it may be an exceptional case; the doctor and not the nurse is the judge as to what is exceptional; she must obey his orders. Do not receive orders from the physician in silence, and when he is gone refuse to obey them. The nurse should never hide anything from the doctor, even if she has done wrong; it is a serious thing to think that life should be risked in order to conceal wrong doing. Never be afraid of troubling the doctor; he will always be glad to hear anything that will help in the diagnosis or treatment of the case. The nurse has much to do with an art whose end is the saving of human life; any neglect to act openly and intelligently becomes a crime.

26. Remember that kindness and tenderness as well as faithfulness are needful to successful nursing.

BEDSORES.

Every precaution should be taken by the nurse to avoid bedsores on her patient. These appear most frequently upon the hips, but may develop elsewhere in parts subjected to pressure. To harden the parts they

must be frequently washed with soap and water and thoroughly dried. A draw sheet should be placed under the patient that can be changed as often as it becomes wet and damp. Be careful to keep the sheet free from wrinkles and inequalities, and the patient's clothes must be kept smooth under her. Occasionally rub on the skin oil or vaseline, and then dust on some fine powder such as oxide of zinc, fine starch, or toilet powder.

Plasters that are entirely unirritating may be applied either before or after there is an evident sore, and if change of position is not possible, it may be necessary to obtain air cushions or a water bed.

An air mattrass or air cushions may be put on any bed, but a water bed must be put in a trough or wooden frame made of just the right size. The water in a bed of this kind should be of a temperature of 70° and renewed every two weeks. To prevent a water bed from sticking to the boards some old cloths must be interposed.

Reddening and roughening of the skin, and pain on pressure indicate an approaching bedsore before there is an abrasion of the skin. Those washes that cause smarting must be discontinued, and sulphate of zinc ointment, and unirritating plasters used.

If a part is dead and likely to slough off, apply charcoal or yeast or chlorinated poultices until the gangrenous parts can be removed. After the separation of the slough you can apply lint smeared over with carbolated cosmoline or whatever application the surgeon or doctor may direct. The sore must be washed and applications renewed each day, and at each time it may be covered with a piece of oiled silk or muslin, or rubber tissue confined in place by adhesive straps.

BATHS.

The SPONGE BATH or washing can be done partly under the bed clothes, and but a small part of the body need to be exposed at a time. Do not bathe immediately after a meal.

Always have a bath of the temperature directed by the doctor. The following terms are used to indicate different temperatures:

BATH.	WATER.	VAPOR.	AIR.
Cold,	32° to 65° Fahr.		
Cool,	65 " 75		
Temperate,	75 " 85		
Tepid,	85 " 92	90° to 100°	96° to 106°
Warm,	92 " 98	100 " 115	106 " 120
Hot,	98 " 112	115 " 140	120 " 180

To put a feeble patient in a bath wrap her in a sheet and lower her gently down in it. When she is taken out wrap her in a warm dry sheet and over this fold a blanket. After a few minutes' rest and a little wiping with a soft dry towel the clothes may be put on.

Do not give a cold bath when the patient feels chilly, when there is perspiration, or there is inflammation or congestion of an internal organ.

The temperature of the body may be lessened by means of the wet pack in cold water, or by means of a sheet wrung out of cold water wrapped around the patient, and changed every ten or fifteen minutes, or by applying towels from the neck downwards, wrung out of cold water.

For the wet pack the sheet may be wrung out of either hot or cold water. Spread a comforter and two blankets on the bed and over these a sheet wrung out of the water. Remove all the patient's clothing, lay her in the middle of the sheet, then draw over one side after another of the blankets and comforter, wrapping her from the neck to

ankles ; apply something to the feet to keep them warm, give plenty of drink, and put a wet compress on the forehead. If this is intended to induce perspiration or repose, the patient may remain in the pack two or three hours.

A BLANKET BATH is used as a means of sweating. A blanket is wrung out of hot water and wrapped around the patient. She is to be packed in three or four dry blankets and allowed to rest quietly for thirty minutes. Then the surface of the body must be well rubbed with warm towels, and the patient made comfortable in bed.

COLD OR TEPID SPONGING is sometimes directed when there is a fever. Commence at the head and sponge downwards, then wrap in a blanket and leave her undisturbed for an hour or more.

The effect of the HOT BATH if long continued is to induce languor and weakness. Watch by the patient while she is in the water, and take her out if there is any sign of fainting. Do not give a hot bath during a menstrual period.

A hot foot bath is one of the best means of revulsion to relieve the head. Let the water come nearly to the knees, cover both the patient and tub with a blanket, keep the feet in the hot water for about twenty minutes.

If a HOT AIR BATH or a VAPOR BATH is given, some device should be used to keep the blankets from pressing upon the patient. Two half hoops may be tied together so that they answer the purpose. By the same means steam may be diffused around her, if hot bricks wrapped in wet flannel and put on dishes are placed in the bed beside her, or steam can be conducted from a boiling teakettle under the blankets. Or place the patient in a large cane seated chair, and surround both completely

with blankets, letting them extend to the floor and be secured about the patient's neck. Under the chair, place a basin of hot water with an alcohol lamp beneath it; bring the water to boiling, and the patient will soon be in a perspiration which may be carried to any extent.

For a BRAN BATH, boil two pounds of bran in a gallon of water and add to the bath.

For a SALT BATH, add one pound rock salt to every four gallons of water.

For a SULPHUR BATH, add twenty grains sulphuret of potassium to a gallon of water. Used for skin diseases and rheumatism.

In cases where there is a high fever, especially in children, the warm water bath is given to reduce the temperature. If a child that has a temperature of 104° is immersed in water heated only to 98° for fifteen or twenty minutes, it will part with some of its heat.

BATHING OF INFANTS.

The bath for very young infants should be quite warm —about 97°. Some nurses ascertain if it is an agreeable warmth by dipping an elbow in the water. The temperature may from week to week be lowered gradually to 85° or 80°. Two baths a day may be given. The evening bath should be warmer than the morning. A brisk, gentle rubbing after the bath is beneficial. If a child gets blue and shivers the bath is too cold. The warm bath will often serve to put a restless and feverish child to sleep.

To bathe an infant support its head on your hand and arm, dip the baby into the bath; then rub the whole surface of the skin rapidly with a soft sponge or piece of flannel soaped; next again immerse the body in the

water, then quickly and thoroughly dry with a fine warm towel.

Before giving a bath have every thing likely to be needed at hand, and the room warm.

CHANGING CLOTHING.

Before raising up a patient to put on a chemise or night dress, pull up the soiled one towards the neck, and as soon as the head and shoulders are raised, the soiled garment can be slipped off over the head and a clean one put on ; then pull this down smoothly under the back before laying the patient down.

If two garments are worn one can be slipped inside the other, and they can be slipped on as one.

CHAPTER VI.

SURGICAL NURSING.

Before I dwell particularly upon surgical cases and wounds of all kinds, I will refer to some general duties of the nurse who attends during a surgical operation.

Generally the patient to be operated on should have a bath the previous night, and perhaps an enema on the morning of the operation ; if the operation is on the female genital organs a warm douche should be given.

Prepare the room by having it well cleaned and aired and of a temperature of about 85°. Such things as are likely to be needed ; for example, vaseline, carbolic acid, basins, sponges, towels, scissors, needles, pins, ice, hot and cold water, should be provided. If you have to make bandages, an old cotton sheet is good material from which to tear the strips. To join the strips lay two ends flat on

each other overlapping for an inch, and baste together all four sides. A roller bandage may be from two to twelve yards long; it must be rolled as tightly as possible; the selvage and all loose threads must be trimmed off.

The proper cleaning and preparing of sponges is important. If one has been used it should be well washed and left in a solution of sal soda, and then kept for several days in a five per cent. solution of carbolic acid. New sponges should be prepared with twice as much care.

In a case where there is to be an operation upon the female genitals, a T bandage may be required; this should be put on before the ether is given, at least the part above the hips, the other part may be left free till after the operation, to be then brought between the thighs and attached to the other in front.

Only a little light food should be taken for three or four hours before etherization. Prepare the patient for going to the room by having her hair combed and braided, artificial teeth must be taken out, and all tight bands loosened. Arrange the clothing so that it will be protected, and so that it can be changed afterwards easily. See that she passes the urine the last thing before taking her place for the operation.

Have a bed ready that is properly made and protected, to which she can be moved when the doctors allow it, and where she can be kept quiet. If there is nausea and vomiting, the effects of the ether, you may quiet it by letting her sip a little hot water or by putting a hot, dry cloth on her neck and chest. During the operation you had simply to wait on the surgeon, now the patient will be principally in your care.

You will receive instruction from the surgeon in regard

to things needing peculiar watchfulness and every point must be carefully noted.

As the wound may need to be watched during the first twenty-four hours for hemorrhage, it must be so arranged that it can be looked at without waking the patient.

The danger to which surgical cases are liable are, 1. Shock; 2. Hemorrhage; 3. Erysipelas; 4. Pyemia; 5. Tetanus. If there is TRAUMATIC ERYSIPELAS the edges of the wound are red and swollen, the secretion of pus ceases, and by the next day the skin around the wound becomes of a peculiar red color. There will be fever, headache, nausea, and a coated tongue.

ERYSIPELAS can be generated by inattention to sanitary laws. It is infectious and spread by fomites, and the virus of erysipelas may give rise to puerperal fever. It is not proper for a nurse that has had the care of a case of erysipelas, to soon be the nurse of a lying-in woman, even if she is careful about using disinfectants on her hands and changing her clothes.

Certain influences augment the susceptibility of the body to the agency of the poison. Among the influences are intemperance, low spirits, anxiety, insufficient nourishment, and foul air. There should be great care in regard to ventilation, and clearing and cleaning the room where it has been present.

The disease cannot be cut short by active remedies, but may be made to terminate favorably by the use of the perchloride of iron, &c. (F. 177.)

TETANUS (lockjaw) may follow slight wounds. At first the muscles of the jaw are rigid, but the rigidity or spasms may extend all over the body. It may result from exposure of the wound to cold, and some cases of tetanus in infants have been attributed to the funis, in instances

where as much as three or four inches were left attached to the unibilicus. In a case of tetanus the patient should lie in a darkened room, and noise should also be excluded.

INCISED WOUNDS, made in the flesh by sharp cutting instruments, of course may be trivial cuts, or deep incisions, and may sometimes be treated by the nurse, either because they are slight injuries or because a surgeon cannot immediately be obtained.

If there is not much bleeding there will not be very much to do. It is well to have a little carbolic acid in the water with which it is washed. The bleeding will soon cease if only small vessels are divided. If there is any extraneous matter on the surface of the wound it must be removed. Then put the surface of the lips of the cuts together, and take measures to keep them in this state till they have become firmly healed. If sutures are necessary take one or more stitches. The most common method of keeping the surface of divided parts in contact is by strips of adhesive plaster. Apply them after having put the wounded parts in a position favorable for bringing the edges of the wound together, then while one holds the lips of the wound evenly together secure them in this position by strips of adhesive plaster applied across the line of the wound. Leave a little interspace between each two strips of plaster. It is not best to bind it up so that there is no passage or exit for blood. But slight wounds may become serious if some poison or virus gets into it; you may need to put on lint or a compress over the strips of plaster and then a roller or bandage.

But some incised wounds instead of being immediately dressed and bound up, demand that immediate attention should be paid to the hemorrhage. We may usually know whether the bleeding is arterial, venous or capillary. If

the wound is open, blood from an *artery* will *spurt out in jets* and is of a bright red color. Unless the artery is very small a surgeon will be needed, but you may be required to act very promptly to suppress for a time a dangerous flow of blood. If a large artery is cut or punctured the hemorrhage may be fatal in a short time. The application of heat or cold, and the elevation of the part injured, may suffice in slight cases, but in these severe cases other means are necessary.

First endeavor to arrest the rapid flow of blood by pressure upon the wounded artery with your thumb. Then if the wound is in a limb let some one tie a handkerchief loosely around the limb, and if you know the course of the artery have the knot directly over it and between the heart and the wound. Then put a stick in under and twist the handkerchief so that it is tight enough to compress the artery. The hemorrhage can thus be checked until the surgeon arrives. If the wound is over a bone in the head or body, the bleeding may probably be checked by binding on a hard compress where the artery is cut, thus making direct pressure upon it. A ligature upon a limb ought not to remain very tight more than an hour.

If the hemorrhage is from a leg below the knee it may be checked by putting a firm roll of cotton in the flexed joint, and pressing the lower part of the leg against the thigh ; this will compress the artery.

Contused wounds are not often attended with serious hemorrhage. If there is in the bruised part only slight subcutamous laceration, nature may soon repair the injury. But if there is considerable contusion indicated by the ecchymosis where small blood vessels have been lacerated and the blood extravasated into celular tissue,

causing the dark discolored spots and other evidences of severe injury, there will be subsequent inflammation, perhaps suppuration, demanding treatment. A proper mode of dressing at first is to bind on a compress saturated with a four per cent. solution of carbolic acid, and for the fever and inflammation one drop doses of ext. veratrum may be given.

But in all cases where wounds are severe the services of a physician will be required.

A PUNCTURED WOUND signifies one made with a sharp pointed instrument, the external opening being small compared to its depth. It is a good rule in these cases to leave a free vent for any discharge that may be set up. The danger in these cases is from serious injury to the deep seated parts, and from suppuration which may burrow and extend still deeper if there is not free exit for the pus.

One mode of treating POISONED punctural wounds (serpent bites, &c.), which of course are peculiarly dangerous, is by applying cups over the wound.

Any wound that suppurates much or sloughs causes a cavity to be filled up, and the process by which the wounds and sores heal is called granulation, and cicitrization. The wound is gradually filled up to the surrounding level by new tissue appearing in the form of small red granules bathed in pus. Healthy granulations on an exposed or flat surface rise nearly even with the surrounding skin, and often a little higher, but when they are much higher, and take on a growing action, they are what is called proud flesh. Their growth may be checked by the application of active astringents ; nitrate of silver or burnt alum may be used, or adhesive straps may be applied. The skin with which it is covered when healed

is formed from the surrounding skin, and the process which is called CICITRIZATION does not go on well except when the granulations are nearly level with the adjacent skin. The centre of a sore has power to form new skin when there is a particle of live skin there, and for this reason skin is sometimes grafted in.

A patient suffering from a suppurating wound becomes enfeebled from the discharge of pus, and should have his strength kept up by nourishing food. A surgeon will always endeavor to prevent the retention and decomposition of discharges, and to protect from external contamination. He will direct the time and means of dressing the wounds, but the nurse must remember that decomposed animal matter acts as a virulent poison introduced into the system as it may be through any abrasion of the skin. All instruments used about a wound must be thoroughly cleansed before being put away. Dressings which have been next the wound should be burned; those which are to be washed should be disinfected. Avoid soiling your own hands with discharges; protect with a bit of plaster every place where there is any cut, or scratch, or sore. If you fear that any virus has got in where there is any sore, or where the skin is broken, touch it with carbolic acid.

FRACTURES AND DISLOCATIONS.

One of the signs of a FRACTURE is crepitus, the sound made by the rubbing of the ends of broken bones together. This sound cannot always be obtained, even when the bone can be moved so that the ends rub each other, and as such motion causes considerable pain the nurse should not seek for it, except as she harkens when the limb is accidentally or necessarily moved. The separation and

inequalities of the ends of the fracture (when the bones are superficial), the change in the form of the limb, and the shortening of it, are circumstances communicating information in very many cases, and the diagnosis is made pretty certain if there is unnatural mobility of the limb. In other cases there is loss of motion or immobility, swelling and pain in the injured part, &c., but it will possibly require the services of the skillful surgeon to detect the existence and character of a fracture; and generally the coaptation or setting of the bone, can be deferred until he arrives. The nurse can do something in the meantime—can have the patient and fractured limb put in as easy a position as possible; perhaps have something ready for bandages and splints. A splint may be made of anything that will hold the bone securely in place; it should be longer than the bone that is broken. Sole leather is sometimes used; cut the required size, softened in hot water, moulded to fit the part and left on until dry, when it will be of the desired shape. Plaster of Paris bandages are sometimes used. These are prepared by rubbing into the ordinary muslin rollers dry plaster. They are then rolled. When they are applied, soft flannel bandages are first put on the broken limb, then the one containing plaster is (after being dipped in water, and some of the water squeezed out), applied over the flannel. It takes ten or twelve hours for this to set and become hard, and the broken limb must be kept still during the time. Dust the part over with toilet powder before the bandage is applied. The success of the surgeon depends very much on the good constant care of the nurse. If it is necessary to move the limb keep up some extension on it and do not twist it. Be very careful that the directions of the surgeon are carried out, and it will probably be

necessary to keep up extension all the time, otherwise the deformity may return and the limb be shortened.

DISLOCATIONS are not so easily reduced as fractures, but after the setting and reduction of a dislocated joint the action of the muscles tends to keep it in place. There is always some laceration of the ligaments and sufficient injury to the soft parts to excite a little inflammation, but the pain is relieved as soon as the bones are replaced.

In general recent dislocations are easily reduced, but when the head of a bone has been out of its place for several days the reduction becomes exceedingly difficult, and as a rule the difficulty of reduction arising from the muscles is proportioned to the length of time that has elapsed from the period of the accident. For this reason a person who has a little general knowledge on the subject of dislocations, should sometimes make an attempt at reduction immediately after the accident.

The signs of dislocations are pain, incapacity of motion in the limb, change in the length of the limb and in the direction of its axis. Sometimes the dislocated limb is nearly incapable of any motion, and sometimes the destruction of the means of union, allows the limb to obey any extraneous influence.

The replacing of the dislocation would require very little effort or force were it not for the resistance of the muscles and tendons attached to them. In reducing a luxated bone the main point is to apply force until the head of the bone dislocated can be slipped into its place, which is generally when it is nearly to a level with its socket. This is easily effected immediately after the accident, because at that time the resistance of the muscles is not great ; it may be best to attempt it, but there should be no delay in sending for a surgeon.

I recommend that an attempt be made to set a DISLOCATED THUMB OR FINGER by making extension on the lower member and at the same time pressing the head of the bone towards its natural situation. If the reduction is effected, the thumb or finger should be rolled with tape and surrounded and supported with pasteboard; and the hand and forearm put in a sling. A surgeon may be necessary even in a case of dislocated thumb or finger, but bones out of joint are so much more easily set at first, that it is best to attempt to set them then, and the same may be said of some larger bones.

For instance, if there is a DISLOCATION OF THE ELBOW, the patient being settled, let one man take hold of his arm near the shoulder, to make counter extension while another makes extension at the wrist. You yourself being seated grasp the elbow with your two hands by applying your fingers to the anterior part and your thumbs to the posterior, press on the projecting point of bone downwards and forwards. You will generally be successful, but I do not advise five minutes' delay in sending for a surgeon. I only advise that an effort be made immediately.

After thus reducing a dislocation of the forearm backwards at the elbow, apply a bandage in the form of a figure of eight; apply some lotion or liniment, and keep the arm in a sling. At the end of seven or eight days when the inflammation has subsided, the articulation can be gently moved, and the motion may be increased every day.

The figure of eight bandage is a roller applied alternately above and below a joint, the roll being carried obliquely over a central point.

The art of putting on a roller bandage is an important one for a nurse to acquire, and I may here give a few

general principles though no exact directions can be given. In applying a bandage care must be taken that it is put on tight enough to fulfil the object in view, without running any risk of stopping the circulation. A bandage must lie smoothly, without wrinkles, and making an even pressure. For bandaging an arm or leg a roller from two to three inches wide may be used ; a few turns may first be given on the hand or foot, and after this every circle is to be applied so as to ascend up the limb in a gradual spiral form and cover about one-third of the turn of the roller immediately below it. To accommodate it to the shape of the limb reverses are made. The bandage is doubled back by placing a finger on the lower edge to hold it firmly, and turning the bandage downward over itself, at such an angle as properly shapes its direction, and these turns can be made as often as is necessary.

PART VI.

REMEDIES AND REGIMEN.

CHAPTER I.

HINTS IN REGARD TO THE TREATMENT OF COMMON DISEASES.

It is my design in a subsequent part of this work, under the head of emergencies, to refer to those exceptional cases in which there is peculiar danger, where some prompt action, something done immediately may either save life or save from protracted disease. In such cases the well instructed nurse may often do something without assuming undue responsibility.

But I now intend to give such instruction in regard to the treatment of minor ailments and complaints which are liable to arise in every family daily, as will enable the mother or nurse to often relieve present distress, and prevent future sickness and suffering. But I hope it is fully understood that while I give such instruction as is founded upon many years of study, and experience, and observation, I do not expect that any one can become a doctor by the perusal of this small treatise, or that the student of this book will ever set herself in opposition to those who have devoted years to the study of the healing art. With the understanding, then, that the mother is to prescribe medicine only in such cases as mothers usually

do prescribe, I will now give some directions that will enable the nurse or mother to act with promptness and assurance and efficiency.

Some medicine should be kept in every house, and I suggest the following as a good list: Aconite, veratrum, paregoric, aromatic ammonia, spirits camphor, essence peppermint, spirits nitre, syrup ipecac, witch hazel, adhesive plaster, chlorate of potash, gum arabic, compound licorice powder, carbolic acid, and the sanguinaria powder.

The last, which is the medicine that I always use in diphtheria, may be prepared according to the following formula: Take of pulverized blood root ½ ounce, Ferri sulphas Exsiccata ½ ounce. Triturate together. Dose, 1 grain put on the tongue dry every four hours. The medicine should be kept dry and is best kept in a phial corked.

All the medicines should be labeled with the name and ordinary dose.

A small quantity of medicine will suffice to keep in the house. I suggest the following amounts and labels: ½ oz. tinct. aconite. Dose, $\frac{1}{20}$ of a drop (or less) every hour. Poison. ½ oz. veratrum viride. Dose, ½ drop every two hours. 1 oz. paregoric. Dose, 1 drop to a teaspoonful. 1 oz. aromatic ammonia. Dose, 20 drops diluted in water. 1 oz. ess. peppermint. Dose, 10 drops. 1 oz. spirits camphor. Dose, 1 to 5 drops. 1 oz. syrup ipecac. Dose, 5 drops to a teaspoonful. 1 oz. spirits nitre. Dose, ¼ teaspoonful in water. ½ oz. fld. ex. witch hazel. Dose, 1 drop every hour. ½ oz. chlorate potash. ¼ lb. compound licorice powder. Dose, 1 teaspoonful. 1 oz. gum Arabic. ¼ yd. adhesive plaster. 1 oz. carbolic acid and glycerine. Poison. 1 oz. sanguinaria powder. Dose, 1 grain.

I will now give my treatment of diphtheria which is mostly by the use of the Sanguinaria powder, as this very well illustrates the benefit of having some mild safe medicine in the house, and using it early in the disease. Nearly thirty years ago I was so well satisfied of the efficacy of this medicine, that I advised all the families with which I was acquainted and where I was their physician, to keep the powder in the house and use it whenever any of them had sore throat; very many of them did so, and it has happened that so far as I know, there has not been a fatal case of diphtheria among them.

I advise that it be given in all cases of sore throat, for although it is not so important a remedy in all these cases, it will very generally be useful in a greater or less degree, and as the sore throat is usually the first thing complained of in diphtheria, its early application is thereby assured.

A very small dose will suffice, but there is no objection to taking two or three grains for a dose every 4 hours, except the disagreeable taste. I advise that it be taken alone, and not covered up, as I believe that it acts locally perhaps directly upon the organism or germ that is the cause of the disease. I have not, however, relied exclusively upon the one medicine, but have always directed that they should give about a teaspoonful of the saturated solution of chlorate of potash every hour, and that they keep kerosene applied on the outside of the throat or neck. Give plenty of milk and other nourishing diet, and but little other medicine is usually required.

The SANGUINARIA (bloodroot) POWDER is properly given in other cases besides diphtheria. A small dose given three times a day is not only a good worm medicine, but will prevent the subsequent developement and growth and multiplication of worms for some time. It is also a

cure for a cough that is dependent on an irritated state of the fauces.

Three grains taken after each meal is a good remedy in chlorosis or suppression of the menses. In these cases it can be taken covered up in wafers or in rice paper, thereby avoiding the bitter taste.

ACONITE should be kept in the house, and very small doses given in cases where there is a little feverishness, and no marked symptoms of disease. It is useful when there is an ordinary cold, and may be given two drops of the tincture in half a glass of water, one teaspoonful every hour. These small doses may be given to a little child, and yet they have some effect upon older persons.

ORDINARY COLDS, however, require more efficient treatment, and I often direct the following: A teaspoonful ginger, a teaspoonful cream of tartar, and three large teaspoonfuls of sugar in a small glass of water, to be drank as one draught after being stirred. Heat the feet and keep them warm especially at night. The combination of ginger, cream of tartar, &c., opens all the secretions so that the lungs, liver, bowels, skin, and kidneys act in a natural manner, and there is immediate benefit.

VERATRUM has already been mentioned as a remedy in inflammation. If good extract or tincture is used it can always be relied on to reduce the force and frequency of the pulse. It is frequently applicable because in most of our diseases the force and frequency of the pulse is increased. The pulse should be counted when it is first given, and counted occasionally afterwards, and when the pulse becomes less frequent the dose must be diminished or omitted. If an overdose is given it is commonly vomited, otherwise it might be dangerous. Ordinarily half a drop every two hours of the fluid extract is sufficient, but

for adults two drops may sometimes be given and repeated in an hour. We have so many maladies that are inflammatory, where the pulse is full and hard, that the indications for its use are frequent. Even in the commencement of fevers, when the pulse is full and quick—where it was formerly the practice of physicians to bleed, veratrum should be given till it has a decided effect upon the pulse. In intermittent fever the effect of this sedative upon it, given at the commencement of the fever or hot stage, is as salutary as is the effect of quinine given during the intermission.

Moderate doses are not liable to do harm except to those who have become quite weak and low. A convenient way of administering it is to prepare twenty drops of the extract in twenty teaspoonfuls of water, and the dose can be easily regulated.

Croup may generally be cured if veratrum is given early and in efficient doses. It is of no avail to administer it at an advanced stage when there is apnœa ; the pulse becoming feeble and intermitting, the lips blue, the skin losing its heat ; and when drowsiness, coma or other fatal symptoms are coming on. When cough, hoarseness, catarrh, and loss of voice are noticed in a young child, it should be narrowly watched and protected against all circumstances likely to aggravate inflammation ; it should be kept in the house, and a warm, moist air should be kept in the room (about 65°), its diet should be milk or farinaceous food ; the functions of the bowels and skin should be attended to ; some aconite should be given ; if there is a slight, ringing cough, place the patient in a warm bath for ten minutes, then confine it to bed ; keep the air of the room moist by the evaporation of boiling water ; give castor oil or other physic, and small doses of

syrup ipecac, and spirits nitre. If the respiration becomes sonorous and difficult, the voice hoarse and gruff, the cough croupy and brassy as it is called, you have the characteristic symptoms of croup. But the peculiar breathing, making a sort of crowing sound with each inspiration, will always distinguish it, and there will always be some fever attending it. Croup sometimes commences with sore throat, and I believe that the sanguinaria powder will usually be efficacious in its cure; but prompt doses of veratrum are still more effectual. At the early stages you may give two drops of the extract, and the dose may be repeated in half an hour, and perhaps repeated afterwards. If there is not evident improvement an ounce of syrup of ipecac or a teaspoonful of sugar and alum pulverized together, may be given if necessary to make the child vomit.

In the meantime hot fomentations should have been applied to the throat. A sponge the size of a large fist, dipped in water as hot as can be borne, should be squeezed half dry and applied under the child's chin so as to cover the larynx, and the temperature maintained by resoaking it every two or three minutes.

Baths may be used during the second stage of the croup; if the child has a temperature of 104°, a warm bath ought to be administered, and the child immersed in it up to its chin for fifteen or twenty minutes.

After the breathing is relieved, still give small doses of syrup of ipecac, or alum, or veratrum, sufficient to keep up nausea for a time. After there is a decided amelioration of the symptoms, give the following: To a teacupful of ginger tea add a teaspoonful of aromatic ammonia, and a teaspoonful syrup of ipecac, and give a teaspoonful every hour.

VERATRUM is the medicine upon which you must rely in croupy cases ; this disease requires vigorous treatment, but vigorous measures in the start will generally save the life of the patient.

PAREGORIC is a useful medicine for pain, diarrhœa, cough and restlessness, and may generally be given advantageously when two of these symptoms are present. Opium has some beneficial effect in inflammation, and very generally paregoric can be given where there is febrile excitement. I would never give it when the child is only cross and irritable, as a bad habit may thereby be engendered. There is always danger of giving an overdose of any opiate ; and although an adult may sometimes take as much as two ounces of paregoric when he is suffering severe pain, I do not advise that it be given to children often in doses that exceed five drops.

DIARRHŒA may be treated in the following manner : To four ounces of ginger tea add one teaspoonful paregoric, one teaspoonful aromatic ammonia, one teaspoonful ess. peppermint, one half teaspoonful spirits camphor, and two ounces of mucilage of gum arabic, and shake the whole together. This is good medicine for all forms of summer complaint, diarrhœa, dysentery, or cholera morbus. One-half teaspoonful of this is a dose, but it can be given efficiently in a larger or smaller dose. It acts by correcting the disordered state of the stomach, and it is upon this usually that these diseases depend.

If the diarrhœa continues for a day or two, some mild astringent may be given ; perhaps three drops every two hours of the extract of witch hazel. The diet is important, and it is well in these cases to have some wheat flour boiled. (F. 47.) The flour grated from it and

sifted, and made into a gruel, may be profitably used with milk.

A thin solution of GUM ARABIC with milk affords both food and drink, and is one of the most useful, and safe, and efficient remedies.

Such medicines as F. 74, 77, 79, 80, may be given in almost every case with benefit. The alkalies neutralize the acids in the stomach, and the aromatics have a grateful action. If the pain continues, a warm bath may be given. Should the gums be swollen, they should be cut down to the teeth.

But there are many cases of diarrhœa where my prescription would be the following: Give no kind of food save that of the milk of the mother, and that only once in four hours. Should the thirst require more fluid to satisfy it, give from time to time a teaspoonful of cold water; put flannel on its body, and woolen stockings on its legs; rub the abdomen three or four times a day with the bare warm hand; do not ever wake the child when asleep; when awake give it five drops paregoric every two hours.

In the preliminary stage of CHOLERA INFANTUM, besides giving the diarrhœa mixture with ar. ammonia, I would enjoin absolute rest in the recumbent position, with warmth to the surface and extremities; perhaps total abstention from mother's and cow's milk, and would order either condensed milk or arrow root prepared with water. I would also make counter irritation over the abdomen by poultices and sinapisms.

DYSENTERY when first coming on is attended with more fever than diarrhœa is. It will be distinguished by the character of the pain and the discharges. The patient is tormented by a sensation as if there was some excrement to be dislodged; he goes often to the night chair, and

strains to get rid of the irritation ; he discharges but little, and what is voided is either a jelly like or bloody mucus ; perhaps mixed with films and membranous shreds. The pulse is hard and frequent, the skin hot, the face flushed, and the patient complains of headache and thirst.

You may give some veratrum at first ; one-half drop of the extract every two hours for one day ; and to allay the thirst, give cold water in which some wheat flour has been stirred.

My principal remedies if the diarrhœa mixture does not cure, is to give the sour drops (elixir vitriol), and either large or small doses of ipecac. I also use injections of starch and laudanum, and rectal suppositories. (F. 155, 160.)

You may find much benefit from some domestic remedies. Give either occasional doses of strong table tea, or spoonful doses of vinegar and table salt, or freshly prepared melted mutton suet.

AROMATIC SPIRIT OF AMMONIA is useful in hysteria, flatulent colic and nervous debility. It is not a powerful medicine to overcome disease, but it is a medicine that ought to be at hand to relieve many little ailments that are liable to occur, when much medicine cannot be given. I advise those that are suffering from sick headache to take 30 or 40 drops of it as a stimulant antacid. It may be well also to take a teaspoonful of paregoric, and to lie down till sleep gives relief. FAINTING FITS OR FAINTING may demand a remedy, and 15 drops ar. spts. ammonia may give the desired relief, if the sufferer lie down and a little cold water be sprinkled in her face also.

This medicine is a grateful antacid in cases of SOUR STOMACH, and it will usually give some relief in the flatulence and distress of DYSPEPSIA.

It may often be used as a slight stimulent, but as it is an alkaline remedy it should not be given conjoined with acids.

ESSENCE PEPPERMINT and SPIRITS CAMPHOR are often used in ailments similar to those in which I use aromatic ammonia, and this may be given in combination with them. Some persons have a decided preference for essence cinnamon, or wintergreen, and these may be substituted for peppermint; aromatics also, such as sweet flag, will have a similar effect.

Spirits nitre is often a grateful stimulant to the stomach, but it is also used in febrile affections, and inflammatory complaints. Four parts of spirits nitre to one of ar. ammonia is diuretic, diaphoretic, and is well suited to certain states of febrile disease.

When given to promote the action of the kidneys, a half teaspoonful or more may be given every two hours in a spoonful of water. Scanty and high colored urine, especially when it is acrid and burning, is an indication for its use.

SYRUP OF IPECAC is used as an expectorant and emetic in colds and coughs. If given to a child, one teaspoonful is an emetic dose, to be repeated every fifteen minutes till it operates. If given to loosen a cough, five or six drops repeated every half hour will suffice; but it may be given in much larger doses. It is often given in combination. (F. 137, 139.)

WITCH HAZEL. Pond's Extract Hamamelis is kept by many people in the house, and as it is usually accompanied with directions, I shall refer to it very briefly. The ordinary fluid extract is perhaps five times as strong as Pond's extract, and when used may be diluted accordingly. It is astringent, and a medicine of that kind is

often useful both internally and externally. A few drops taken each day may prevent bleeding, when there is a tendency to hemorrhage, although ergot would be a more efficient remedy if given for immediate effect.

CHLORATE OF POTASH is very generally given in diphtheria, and is generally safe ; no harm can come from the advice to keep it constantly in the house ; it is not very soluble, and the saturated solution is not too strong for use. It is a good way to put a half teaspoonful of it in a glass, and keep a little water on it all the time, and give ten or twelve teaspoonful doses of the solution a day for any kind of sore throat or mouth.

COMPOUND LICORICE POWDER (F. 108) is a mild laxative, and may be given to a young child in half teaspoonful doses. In larger doses it will serve well for older persons for physic. While I think it well to keep this in the house and to occasionally administer it, some other sort of cathartic may at times properly be preferred. A great variety of this sort of medicine is attainable, no one kind is always the best ; this powder is however a good laxative, in doses of a teaspoonful repeated in eight hours if necessary.

GUM ARABIC is not often kept in the house as a medicine, but I think it eminently proper to keep it ; scarcely any other medicine is so safe and harmless either in large or small doses, and few are more decidedly useful than this in some cases. Made into an emulsion and taken either alone or in combination with other medicine, or used as food, it is good in every variety of bowel complaint. A teaspoonful of the mucilage stirred into a cup of cold water and drank by the patient, may serve as medicine and drink and sustenance when he can take no other food. It may properly be added to expectorant and

diuretic medicines ; but the beneficial effects are most obvious when it is administered for inflammatory affections of the gastric and intestinal mucous membrane. Slippery elm and flaxseed tea have a similar effect, but are not so decidedly beneficial.

CARBOLIC ACID nine parts and GLYCERINE one part may be kept mixed together ; not because the glycerine assists or modifies the action of the carbolic acid, but because it renders the acid soluble in the water, so that the solution may be of any strength desired. CARBOLIC ACID is not much used internally ; it is so powerful that it ought to be regarded as a poison ; its effect is good, however, if given in small doses very much diluted. It is believed to be destructive to disease germs, and may very properly be given in bad cases of diarrhœa and dysentery. Two drops of the acid in a glass of water is a weak solution, and may be given without harm ; a half teaspoonful every two hours.

There is not space in this work to describe particularly the various cases in which it may be used externally. A solution one part in 100 of water, may be applied advantageously to any inflamed part or to any CUTANEOUS ERUPTION, or may be used as a wash or gargle in any SORE MOUTH or SORE THROAT. To cure sores or eruptions, however, it is often necessary to apply it much stronger. I apply a 1 to 5 solution to the sores once or twice, and to burns a solution 1 to 30 for a few days.

I will give more particular directions for its use in HEMORRHOIDS or PILES. Apply the acid and glycerine (9 to 1) to the piles by dropping 3 drops upon a bit of tissue paper and pressing it against the tumors, and into the anus. Repeat this each day for three days, then use a mild ointment or suppositories. (F. 206.)

A few doses of the compound licorice powder will be useful for piles if the bowels are not regular.

I have already given some specific directions in regard to some diseases in very young children; what further instructions I give will be of a general character.

HOME REMEDIES AND APPLIANCES FOR SICK CHILDREN.

DENTITION predisposes to sickness, if it does not cause it, and it may call into activity latent tendencies to disease. It may cause such symptoms as the following: redness, heat, and tenderness of the gums; an increase of saliva; starting as if in fright; restlessness, or interrupted sleep; eruptions on the head or body; derangement of the digestive organs, and sometimes convulsions. During the period of dentition, be especially careful that the child has its food and sleep regularly, and that it is restricted to suitable quantities of food at a time. Keep the head cool and the feet warm; wash the child daily in cold water, and allow it to be much in the open air. If a child is worrisome and irritable it will be necessary to cut the gums. Lance them at the elevated points, cutting them down to the teeth. At the same time, aconite can be given, and perhaps a warm bath; and if there is considerable fever give ordinary doses of veratrum. These remedies are so generally useful where there is fever, that I will venture to recommend them when either THRUSH, MEASLES, GERMAN MEASLES, MUMPS, SCARLET FEVER, CHICKEN POX, or WHOOPING COUGH is coming on or suspected. Each of these diseases have a natural course which they must run before they terminate, and it is best, as in diphtheria, not to give medicines powerful enough to interfere with the natural course of the disease. Do not give physic. (F. 121, 122.)

So in OPTHALMIA it is better to have nothing but a little salt in the water than it is to use harsh things to bathe the child's eyes. Do not rub the eyes ; let a small stream of tepid water trickle onto them, and wipe the discharges away with a soft rag. Burn the rag, wash your own hands, and keep them away from your own eyes, on account of the danger from contagion. (F. 210, 211.)

CONSTIPATION cannot be treated in all cases without giving some aperient medicine. (F. 108, 109.) Oat meal gruel as a diet may be helpful ; and fresh vegetables—cabbages, turnips, onions, ripe fruit ; oatmeal porridge with molasses, and brown bread may be taken freely. Infants may be partly fed on corn starch, and older children may have cracked wheat (F. 35), or peas, beans, squashes, and other fresh vegetables and fruits in their season. A good draught of water on rising and retiring is advisable ; and a teaspoonful of soda and molasses mixed together and taken daily for a week may cure a costive habit. A suppository of castile soap may induce a movement in a child, or it may be best to give an injection of tepid water, or soap and water.

For CHAFINGS bathe the parts well in tepid water, dry with soft cloths, and apply by means of a soft sponge, F. 212.

The following diseases are inflammatory, and demand at first mild treatment with aconite, veratrum, and warm baths :

In TONSITITIS (quinsy), use the blood root powder and bicarbonate of soda. The patient can apply the bicarbonate of soda to the inflamed tonsil with his finger, or it can be blown into his throat through a quill, or through a hollow roll of stiff paper that contains a few grains. For the chronic form of tonsilar enlargement use F. 213.

CORYZA or snivels is an inflammatory affection of the mucous lining of the nose, attended with an abnormal secretion. Sometimes the child can only breathe through its mouth ; in such cases you may draw the breast milk, and feed the child by means of a spoon. Give aconite, and as a local application the inside of the nose may be often smeared with vaseline, or cold cream, or carbolated cosmoline.

Bronchitis, pneumonia, pleurisy, and other inflammatory diseases, may not show their distinctive character in their incipient stage, but there will be at first sufficient fever to indicate the need of aconite, veratrum, and perhaps the warm bath. Accessary means may be used, such as the following : the patient should be placed in a warm room (about 65°) and have only light bed clothing ; if the child is taken out of bed he must have on a warm wrapper, or be otherwise well covered ; he should not lie flat in bed, but he should be somewhat propped up with pillows ; and it may be best to keep on a continuous poultice to the chest in front and back. The patient should be kept very quiet, have mucilaginous drinks and farinaceous diet ; and the air of the room should be moistened by steam or the evaporation of water ; and the ventilation of the apartment must not be neglected. They must have frequent sips of cold water to allay thirst, besides marsh-mallow, slippery elm, or flaxseed tea, and revulsives must be used as well as poultices and fomentations.

By the aid of a CLINICAL THERMOMETER many diseases may be distinguished even in the incipient stage.

If a person without any premonitory symptoms is seized with a chill, followed by rapid breathing, a dull pain in the chest, cough, high fever, and comparatively slow pulse ; if the thermometer indicates a temperature of 104° or

105°, and the pulse does not beat over 110 a minute, the case is one of ACUTE PNEUMONIA. Sometimes the pulse is below 90°; if it exceed 120° it is almost certain to be fatal.

AGUE. CHILLS recurring regularly for a few days indicate the intermittent nature of a disease. But during the first chill if the thermometer is applied, we may know that a case is one of fever and ague, if while the skin is yet cold the thermometer rises to 105°, and later to 107°, and during the stage of sweating the instrument shows a decline of 2° every fifteen minutes till it has reached 98½°. This rapid rise and decline is due only to malaria, and quinine is indicated. (F. 182.)

TUBERCULAR PHTHISIS. If a patient has been losing flesh of late and been troubled with a short, dry cough, take his temperature at about six P. M. for a few evenings. If the thermometer records 99° to 100°, and no other cause exists for this regular nightly increase of temperature, the case can be put down as one of incipient consumption, especially if tuberculosis has been in the family. Endeavor to improve the general nutrition by attention to the quantity and quality of the food (as generous diet as can be taken without disturbing the stomach or increasing the feverish symptoms); by enjoining a residence in a healthy climate; by exercise in the open air; by warm clothing; by daily tepid sponging, with friction of the skin; and by codliver oil or petroleum emulsion with hypophosphites. An animal diet is generally necessary. If digestion fails and there is acidity of the stomach, give pepsin. (F. 72.) Add a teaspoonful of sweetened lime water to a tumbler full of milk, and if this agrees with his stomach, he can take that amount four times a day.

In TYPHOID FEVER the patient may complain of lassitude, headache, pain in the back, etc., for several days before he is feverish. Then his temperature is 99°, and it may be one degree higher each night, until on the sixth and seventh evening it is 104°; it being each morning one degree less than at night. Even if there is no diarrhœa, tympanitis, or eruption, we may by observing the temperature, feel sure that we have a case of typhoid fever. If it is a moderate case the temperature will be 104° at night, and 103½° in the morning, till the fourteenth day, when it may decline one degree in the morning, and half a degree or one degree in the evening. After that it may decline regularly till on the 21st day it may be 98½°. Relapse or chest difficulty may modify this regular decline, and the nurse must carefully note and report to the physician the temperature each morning and night.

In TYPHUS FEVER the temperature reaches its height, 104° or 105°, within thirty-six hours. It continues at that height, with morning remissions of one-half degree, till the eleventh or thirteenth day, when it rapidly falls to the normal; a sweat or a long sleep ushering in the favorable termination.

SCARLET FEVER. If a child is suddenly taken ill with a chill, vomitings, very rapid pulse, and the thermometer records 105° or more, very early in the disease, it denotes scarlet fever; and from this sign alone, even without any sore throat or eruption, a diagnosis may be made. This disease may very frequently go on well without any danger till the eruption subsides, but danger arises from exposure of the child to cold any time during the subsequent four weeks.

HYSTERIA. There may be pain perhaps in the bowels,

abdominal tenderness, and vomiting; or there may be symptoms of inflammation in some other part; if the thermometer does not register more than 98½ it is probably hysteria. Assafœtida, valerian, and such remedies will probably cure.

APOPLEXY. In this disease the thermometer soon after the attack shows a temperature of only 97°, and lower still if there should be a second effusion to still more compress the brain. On the contrary, in a fully developed case of sunstroke, the thermometer will not record less than 107°.

It would be a good thing if every nurse and every mother kept a clinical thermometer.

CHAPTER VII.

EMERGENCIES, ACCIDENTS, SUDDEN SICKNESS.

The diseases last named were there mentioned because their distinctive character could be determined by the thermometer. They are, however, examples of the kind of cases that I design now to speak of particularly; where there is apparent cause for alarm, and where there is apparent necessity that something should be done immediately.

These cases demand the services of a physician, and my design is only to instruct you what to do before the doctor arrives; or rather I should say, the instructions that I give are not intended to supercede medical advice, though some cases may be of a kind in which little or nothing can be done. These emergencies are of every

variety, and I shall bring the different kinds before you as fully as I can. Ordinarily it is not at first apparent what the real malady is.

We will suppose that during the heat of summer a man drops down unconscious. At first no one knows whether it is apoplexy or SUNSTROKE. Do not get excited and do things that are rash; if you do not know what ought to be done, do nothing; if you are not excited you may at least use what knowledge you have acquired.

Send a message to the doctor, giving a description as far as you can of the case, so that he may come prepared to treat it. Secure plenty of fresh air and room, and get rid of those who are around, who cannot be useful; if respiration is suspended, and there is immediate danger, something may be done at once; at least to know if the man has merely fainted. Have him laid in a horizontal position; you may soon have him carried to the nearest house. For this something should be provided on which he can lie horizontally; instruct the bearers to avoid unnecessary jolting; have a bed ready to put him on; if the case is supposed to be fainting give aromatic ammonia or a little stimulant of some kind; do not raise the head, but keep it low as the feet. If it is a severe case of sunstroke, the skin is hot and the pulse weak and fluttering; there may be convulsions, but probably there will be no movement; remove the clothing with as little disturbance as possible; do not cut anything that can be ripped; throw cold water on the head and chest, or put the patient in a cold bath of about 70° at first, and gradually reduce the degree of cold; give a cup of good table tea; do not give alcoholic stimulants without medical advice. If consciousness returns and the temperature again rises, repeat the cold applications to the head, neck, and chest;

give ice water or ice tea ; it may be best to rub the head and body an hour longer, and to give stimulant enemata.

APOPLEXY can be distinguished from syncope by the pulse, which beats perhaps with unnatural force ; the face instead of being pale is generally flushed, and turgid, and the respiration goes on though it may be labored and stertorous. The condition of the sensorial functions is much the same as it is in narcotic poisoning, or when a man is dead drunk. The nurse should make all necessary enquiries so that she can furnish the physician with a full history of the case to help him in his diagnosis. In apoplexy the pulse is rather slow though full, and the pupils of the eyes, one or both, dilated. There may be paralysis of one side.

Loosen the clothes, elevate the head and chest, apply cold water to the head, and heat to the extremities, and perhaps sinapisms also. Giving physic may be deferred until the doctor arrives ; and in general you may pursue a similar course whether the case is one of CONCUSSION OF THE BRAIN, or COMPRESSION or narcotic poisoning ; cold may be applied to the head by means of pounded ice in a bladder ; keep the head cool and the feet warm.

Many of this class of cases require still very careful nursing after the dangerous symptoms are relieved. The skin should be kept healthy by daily friction and bathing. The bowels must not be permitted to become costive ; the diet should be light, the food well chewed, the mind kept cheerful and free from excitement.

POISONS.

In cases of poisoning no time is to be lost in administering relief, and it is important that the nurse should be familiar with all the usual antidotes.

Most commonly in a case of poisoning, speedy free vomiting should be induced by those articles that are at hand, and that are quick and prompt in their effects.

Even if the poison has been taken hypodermically, emetics may be given; these will do no harm: Sulphate of zinc (white vitriol), is very prompt in its action, and may be used when it can be procured (F. 134); and if vomiting be present, we may aid it by giving warm water, or perhaps pulv. ipecac, or some other vegetable emetic.

But either common salt or mustard is nearly always at hand and may be given. Stir up a tablespoonful of salt or a teaspoonful of mustard in a cup of warm water, and give immediately, and repeat until a pint is swallowed; do not stop to stir them very much, but give as quickly as possible. You may tickle the throat with a finger or a feather to induce immediate vomiting. Do not give tartar emetic; do not give fluids so as to distend the stomach too much; some bland fluid may be given with or immediately after giving mustard and salt; either milk, lime water, white of egg, flour and water, gruel, drinks sweetened with honey or sugar. Oil should not be given unless ordered.

Before naming the antidotes for particular poisons I wish to instruct the nurse to not only note the symptoms, but also to examine every article of a suspicious nature, (such as phials, boxes, or papers containing powders), and preserve them. Preserve also all vomited matter and everything that may afford a clue to the poison for after inspection, if the nature of the poison is likely to be a subject of after inquiry.

In regard to the symptoms it may be well to know that Prussic acid, cyanide of potassium, strong ammonia, pure carbonic acid gas, or pure carbonic oxide may KILL al-

most at once, as indeed almost every poison may if taken in a very large dose ; strong acids, alkalies, aconite, antimony, arsenic, tobacco, or lobelia may cause SPEEDY COLLAPSE.

Belladonna, hyoscyamus, strammonium, canabis indica, alcohol or camphor, may cause DELIRIUM.

Nux vomica, strychnine, antimony, or arsenic may cause TETANUS or tonic contraction of the muscles.

Antimony, arsenic, carbonic oxide, aconite, strong acids or alkalies may cause CONVULSIONS.

Gelsemium, conium, aconite, arsenic, or lead may cause PARALYSIS.

Belladonna, atropine, hyoscyamus, or strammonium causes DRY SKIN ; and opium, aconite, antimony, alcohol or lobelia causes MOIST SKIN. The skin is almost always moist in collapse.

Belladonna, atropine, hyoscyamus, stammonium, aconite, alcohol, chloroform or conium may cause DILATED PUPILS.

Opium or chloral may cause CONTRACTED PUPILS, especially during sleep.

Prussic acid, laudanum, alcohol, carbolic acid, acetic acid, ammonia, chloroform, creosote, iodine, phosphorus, camphor, or nitro benzole can often be smelled in the BREATH.

Belladonna, atropine, hyoscyamus, strammonium or opium cause the MOUTH and TONGUE to be DRY.

Arsenic, ammonia, cantharides, jaborondi or mercury cause SALIVATION.

Arsenic, antimony, corrosive sublimate, cantharides, digitalis, colchicum or colycinth causes VOMITING and PURGING.

Lead, colycinth, copper, or arsenic causes COLIC. Arsenic, antimony and lead cause CROUP.

ACIDS OF AN IRRITATING CHARACTER.

These include ACETIC, CITRIC, MURIATIC, NITRIC, OXALIC, SULPHURIC, and ARSENIOUS acids. Their irritating and corrosive character depend upon their strength and concentration, or the amount taken, some or all of them being salutary in small diluted doses. Their injurious effects are severe the moment they are swallowed, as they excoriate the throat and gullet at the time of swallowing. But antidotes will lessen their power on the stomach and bowels if given soon, and if given with the emetic will render the vomited matter less irritating. Their corrosive character causes severe pain, which may be followed by symptoms of shock.

Alkalies are the antidotes. Give some one that is at hand, either calcined magnesia, a solution of soda or soap, lime water or whiting. At the same time the emetics and alkalies are taken, give demulcents, such as milk, mucilage, gruel, flaxseed tea, etc. Of course the inflammation consequent on the poison must be treated.

Carbolic acid might be included among those above named ; the same treatment would be proper, except that strong alkalies are ineffectual as antidotes. Besides emetics give milk, demulcent drinks, and carbonate of magnesia, with a little paregoric in water. Secure rest and warmth to the body, use counter irritants externally.

ARSENIOUS ACID is included in the above list. The antidote for this is hydrated peroxide of iron, recently prepared, and given in large doses. It is prepared by the addition of liq. ammonia to muriated tinct. of iron, or liq. ferri sulph., which yields the hydrated peroxide of iron

as a dense precipitate ; and this should be given in tablespoonful doses every five minutes until the symptoms are relieved. The nurse and attendant's duty, however, is to give emetics and demulcents freely.

Alkalies are like the acids, irritating ; if strong they excoriate the fauces and esophagus. Caustic potash, lye, soda and hartshorn are examples. In these cases give acids such as vinegar and lemon juice as antidotes, and oils also to unite with the alkali and render it less irritating. Demulcent drinks must be given with the emetics, and acids must be continued afterwards.

For lunar caustic (nitrate of silver) give two teaspoonfuls of salt in a pint of water, also the white of egg with other demulcents.

Corrosive sublimate. For this poison the antidote is white of egg and milk, or a mixture of wheat flour and water and soap, which may be given with emetics, or after them ; before if no emetic is at hand. The attendant nervous symptoms may be alleviated with paregoric.

Tartar emetic of itself produces vomiting, but this may be kept up by giving mucilage and such astringent infusions as common tea, &c.

Copper. The sulphate or acetate of copper might act as an emetic, but small quantities remaining in the stomach might act as irritant poisons. Give large doses of simple syrup as warm as can be swallowed ; give also the whites of eggs and large quantities of milk ; and as an antidote the hydrated peroxide of iron.

For bismuth, iodine, or copperas taken in an overdose, give the same emetics and demulcents as for copper.

Zinc and Tin. The sulphate of zinc and the salts of tin when not vomited entirely, produce severe irritating

effects on the stomach. Besides milk and albumen give carbonate of soda in solution.

COLYCINTH, CROTON OIL, and SAVINE OIL may produce like the above, vomiting, diarrhœa, and also constriction of the throat. Give copious doses of barley water, etc.; give opium and perhaps stimulants. These cases and all the rest of the above may be benefitted by taking freely of gum Arabic mucilage, and may demand treatment for inflammation.

CANTHARIDES may produce severe pain in the bowels, bloody evacuations, strangury, burning thirst and fever. Give emolient drinks with enemata, to which some laudanum may be added, and also camphor ; oil must not be given in cases of poisoning by cantharides or phosphorus.

TOADSTOOLS, AGARIC, ACONITE, BELLADONNA, CONIUM, COLCHICUM, HELLEBORE, and ALCOHOL, are acro-narcotics which may cause severe irritation of the throat and stomach, and such symptoms as burning heat of the esophagus and stomach, thirst, violent nausea, purging, dryness and constriction of the mouth and throat ; and be followed by such symptoms as are produced by narcotic poisons: vertigo, headache, perversion of vision, sense of suffocation, disposition to sleep, numbness or paralysis of the limbs, prostration of the strength, cold extremities, feeble pulse, and stupor.

STRAMMONIUM, CAMPHOR, CHLORAL, DIGITALIS, BITTER-SWEET and HYOSCYAMUS may be called narcotic poisons. Give prompt emetics, demulcents, witch hazel, active purgatives, strong coffee ; keep the patient roused, use electro-magnetism, cold douche, and employ friction.

For PHOSPHORUS, which a child sometimes obtains from the ends of matches, give emetics, and administer big doses of magnesia in water and mucilage. There are

a few other poisons which might be classed as irritant, such as nitrate potash (salt petre) which need the same class of remedies as those already named. For nitre give also stimulants freely.

Opium and belladonna are antidotes to each other, and if a person has taken an overdose of one, the other should be given if it is at hand. Evacuate the stomach perhaps by tickling the fauces; give also strong coffee, active stimulants, witch hazel; employ friction, perhaps electro magnetism, and keep the patient moving. Morphine of course demands the same.

For nux vomica and strychnine, besides giving an emetic give aromatic spirits ammonia, and also chloroform internally in ½ drachm doses diluted. Give tannin and also animal charcoal, milk and spirits camphor in large doses.

Carbonate and acetate of lead sometimes act as poisons. Give sulphate of zinc as an emetic, and epsom or glauber salts as a cathartic. A mixture of syrup and persulphuret of iron may be given as an antidote to any mineral poison.

Hydrocyanic or Prussic acid, laurel water, and cyanide of potash cause immediately extreme prostration, nausea, giddiness, pale countenance, slow breathing, and paralysis. Dash cold water on the face to produce a shock, taking care not to soak the clothes of the patient; we may produce a more decided effect if we alternate cold and hot effusions. Have the patient inhale steam containing liquor ammonia or hartshorn; give internally aromatic ammonia and chloroform; use friction, especially along the spine and feet; artificial respiration may be necessary. Give chlorine water of the strength of two drachms to the ounce.

ANIMAL POISONS. For BITES OF SERPENTS apply a ligature above the wounded part; use carbolic acid or any active caustic; apply cupping glass (or mouth, when there is no sore in the mouth.) Bisulphite of soda in large doses is said to be an antidote. Give stimulants in large quantities.

MAD DOG BITES. A person having been bitten by a mad dog, or one suspected of rabies, the wound must first be made to bleed, then washed, and finally cauterized. Enlarge the wound so that the blood may flow out freely; press out still more blood, and you may safely suck out some if you do not have any sore on your mouth or lips. After tying a bandage above the wound it must be washed until cauterization can be effected. This can be made either with Vienna paste, butter of antimony, chloride of zinc, or a red hot iron. If the dog can be secured and shut up it is better than that he should be immediately killed. If the dog does not prove to be mad, the person bitten should know the fact, as this may prevent the alarming fears that of themselves sometimes prove disastrious. The bitten person should have his mind diverted as much as possible.

CARBONIC ACID GAS. A person having been poisoned by inhaling choke damp or the fumes of burning charcoal, loosen the clothing, dash cold water on the head and face, give plenty of fresh air, stimulants, and inhalations of ammonia. Employ artificial respiration if necessary. If the body is cold employ hot applications.

OTHER EMERGENCIES, PERSONS ASPHYXIATED FROM DROWNING, HANGING, &C.

When a person is asphyxiated treat him instantly. Give all the fresh air possible; remove all light clothing from

the chest and neck and face; try to restore respiration first; clear the throat by placing the patient on the face with one arm under the forehead; the tongue falls forward and leaves the windpipe free; then wipe and cleanse the mouth.

TO EXCITE RESPIRATION turn the patient on his side and apply some stimulating agent (as camphor or ammonia) near the nostrils, and dash cold water, or hot and cold water alternately on the chest, which may have been previously rubbed briskly. (The effort to promote warmth and circulation by rubbing should be kept up continuously as far as possible.) Should there be no respiration immediately you can use

MARSHALL HALL'S METHOD to imitate respiration. "Turn the patient again on his face, raising and supporting the chest well on a folded coat or other article of dress; make gentle pressure on the back, after which turn him over on his side; then again on his face, and again press a little; repeat these motions at the rate of fifteen a minute. During the operation let one person attend to the movements of the head and the arm placed under it." If there is respiration and consequent life, dry the hands, in cases of drowning; and as soon as you can, strip the body and gradually reclothe or cover it; but if the breathing is not satisfactory, after continuing these same efforts to restore respiration for about fifteen minutes, you may use

SYLVESTER'S METHOD. "Place the patient on the back on a flat surface, inclined a little upward from the feet; raise and support the shoulders and head on a cushion or a folded article of dress; draw forward the patient's tongue, and keep it projecting beyond the lips, by having a band or string around the tongue and chin, or by rais-

ing the lower jaw so that the teeth retain it ; standing at the patient's head, grasp the arms near the elbows and draw them steadily upward above the head, and keep them stretched upwards for two seconds ; then turn down the patient's arms and press them gently and firmly against the chest for two seconds ; repeat the movement alternately about fifteen times every minute until a spontaneous effort to inspire is perceived ; then proceed TO INDUCE CIRCULATION AND WARMTH." Rub the limbs upward with energy, and continue the friction under the blanket and over the dry clothing ; promote the warmth of the body by applying flannels, bottles of hot water to the pit of the stomach, the armpit, the thighs, and the sole of the feet ; then if the power of swallowing has returned, stimulants and coffee should be administered.

A STROKE OF LIGHTNING may cause immediate death by its effects on the nervous system. Sometimes it produces unconsciousness without being fatal. In attempting resusitation employ artificial respiration, and if there are any signs of life treat as directed for shock. If there are burns complicating the case, of course the burns must be treated. When there is SHOCK the patient lies in an apoplectic state, the surface pale ; there is faintness, trembling, cold perspiration, low temperature, feeble pulse, and probably nausea and vomiting. Keep the patient's head low, give aromatic ammonia, and apply heat to the extremities and to the stomach. Strong beef tea should be given, and hot tea and coffee.

There are but few exigencies that generally occasion more alarm than CONVULSIONS. Fits may come on without premonitory symptoms ; there is sudden loss of consciousness, accompanied by irregular and powerful contractions of the muscles. All the voluntary muscles may be affect-

ed, or there may be only spasm of the features, or of one side, or of a single limb. During a general paroxysm the countenance is distorted, and the face pallid or livid; generally there is stertorous breathing, and as the attack subsides a disposition to sleep. It is seldom fatal in adults, unless caused by brain or kidney disease.

Do not attempt too much treatment, but you may put the patient in such a condition as to help his recovery. His dress is to be loosened, and all clothing about his neck removed; place him where he can breathe pure and cool air, and you may prevent his falling out of bed; if the face is flushed, cold may be applied to the head and warmth and sinapisms to the extremities. If occurring in a young child you may give a warm bath, or a warm hip bath. If there is ability to swallow, give bromide of potassium, either alone or simultaneously with the administration of chloroform and ether.

GIVING ANESTHETICS.

If you give chloroform you may pour a few drops on a handkerchief and hold it an inch from the patient's nose and lips. Ether and chloroform together may be poured, a teaspoonful at a time on a little cotton inside a cone of paper made large enough to fit over the mouth and nose, the air being nearly shut out. The head of the patient must be kept low while he is under the influence of it. Observe the pulse while giving it; a feeble pulse is a sign of danger, and if the pulse is growing weak, or the face is growing livid or pale, stop giving the chloroform; if the symptoms continue, and there is no natural respiration, draw the tongue forward so that it will not obstruct the trachea; have plenty of fresh air; apply friction by rubbing the limbs, and if necessary artificial respiration.

CLOTHES ON FIRE.

Accidents from fire are very likely to cause a panic, but possibly you may by effort so cultivate coolness and presence of mind, as to act wisely and deliberately even then, even if your own clothes are on fire. If you are able to think at all, the question will be if there is water within reach that can be used to extinguish it immediately; if there is not, how can it be smothered? Possibly the burning portion can be enveloped in that part of the dress that is not burned; or a rug may be within reach, or some woolen thing that may be used to stifle it, without pressing it against the person's flesh. But very probably the best that the person can do is to lie down on the floor and roll on the carpet. If you see another woman on fire, do not scream or run away; grasp her clothes all together, if you can without pressing the fire against her person; or if you can immediately put out the fire by catching up a rug or some heavy woolen thing and enveloping her in it, do so. Remember at the same time to avoid inhaling much of the flames or setting fire to your own clothes.

BURNS AND SCALDS. There are various modes of treating burns, but one good general rule is that the dressings should be so applied as to exclude the air. If the skin is not destroyed or removed, either the bicarbonate of soda may be applied dry, or in a strong solution; or wheat flour may be applied dry, and the burn covered with a thick layer of cotton batting; or the white of egg may be spread over it, and another layer put on as soon as one dries, until some six or eight layers are applied. If the skin is abraded either olive oil or vaseline or carbolated cosmoline applied and covered with cotton or wool is a good dressing. (F. 187, 214.)

BURNS PRODUCED BY STRONG ACIDS should be first bathed with some alkaline solution such as soda or ammonia; on the contrary if lime or caustic potash cause the injury, neutralize the alkali by applying acid diluted; a teaspoonful of vinegar or lemon juice in a teacupful of water would suffice.

If a BAD SCALD is occasioned by a child falling backward in the water, carefully undress the child; lay it on a bed on its breast if the burn is on its back; then dust over the parts with bicarbonate of soda; lay muslin or cotton wool over it, and so arrange the bed by means of two boxes and a board that the covering cannot press on the scald.

If a FRAGMENT OF LIME GETS INTO THE EYE, bathe it immediately with a weak solution of vinegar or lemon juice.

If something like dust or dirt gets in the eye, it may be cleaned out by taking hold of the eye lash and pulling the upper lid down, and forcibly blowing the nose. You may sometimes wipe the dirt from the eye with a soft handkerchief. Always wipe the eye towards the nose.

When something like a PEA OR CHERRY PIT IS IN THE NOSTRIL direct the patient to draw in a full breath, then close the mouth and the other nostril and try to blow the offending object out. If he fails you can probably remove it by means of a hair-pin; or while the other nostril is closed, blow forcibly into the mouth and dislodge the object.

Remove insects from the ear by oil or tepid water. A little oil or glycerine may first be dropped into the ear; and then it may be syringed with warm or tepid water, taking care not to close the opening with the nozzle of

the syringe. This may be tried if the substance in the ear is hard.

If a child is choked let it get on all fours and cough. Anything stuck or lodged in the throat may sometimes be worked out with a hair-pin or bent wire.

If a CROCHET NEEDLE'S HOOKED POINT IS IN THE FLESH make certain on which side the hook is, then put an ivory bodkin or any similar article down to the hook, and draw both out together.

If a FINGER OR THUMB IS CUT in two, without any crushing of the parts, the severed portion should be immediately applied to its place; if the cut is clean, the hewn off part may be made to unite, possibly if it has been off for two hours. The wound should be washed with carbolic solution if that is immediately procurable, and the severed parts should be accurately fixed by sutures (stitches) in their normal position, and a splint applied.

Life is sometimes destroyed suddenly by persons drinking a large quantity of cold water when greatly fatigued. To avoid all danger in these cases, a small quantity should be sipped at a time; and washing the face, hands and temples before drinking is a good precaution. But if by drinking cold water the system is severely chilled so that prostration takes place, endeavor to secure warmth by giving a teaspoonful paregoric, and rubbing the hands and body briskly; and if the patient can be brought sufficiently to his senses he should be made to drink enough warm water to induce vomiting; this excites circulation and perspiration, and determines towards the surface. Warm applications should be made to the feet and to the region of the stomach, and the body should be warmed as soon as possible.

CHAPTER III.

SLIGHT HURTS AND AILMENTS.

There are a hundred little accidents liable to occur in a household which a very little surgical skill would suffice to set right.

Besides medicines, there are several handy articles which should be always kept ready in a clean drawer, should an emergency arise that demands their use. Have a little case containing a lancet, scissors, pins, needles and thread; have also one or two bandages, some lint and oiled silk, a bit of lunar caustic (nitrate silver), and some strips of adhesive plaster, a stimulant lotion, an eye lotion, a liniment, and one or two kinds of ointment.

Use the lancet to open small abscesses or gum boils; the pins are handy for fastening bandages, &c., and should be of different sizes; the thread should be strong and white; the needles of fair size, with good large eyes; charpie may take the place of lint; it is made by scraping old linen; it is often useful; for instance, to heal old sores, dip LINT or CHARPIE in clean, cold water, to which a few drops of carbolic acid has been added; then apply it to the sore, which it must more than cover; then apply oiled silk and a retaining bandage. The lint may be used for water dressings to wounds, and these may take the place of poultices in treating swellings which we wish to reduce or soothe.

Keep the best ADHESIVE PLASTER procurable; and it ought to be cut up into different breadths. When it is

necessary to use this plaster, see that the wound is perfectly clean, and apply long narrow slips. Warm the plaster by holding it against a can of boiling water for a few seconds, then apply it across the wound. In case of scalp wounds the hair must be cut off before the plaster is applied.

In a case of fractured ribs, strapping should be applied to the injured side.

LUNAR CAUSTIC is used to cauterize dog, or cat, or skunk bites that are supposed to be POISONOUS.

An excellent LOTION for HEADACHE and other pain is made of a quart of water, a teacupful of common salt, one ounce of hartshorn, and a half ounce of spirits of camphor ; mix and keep in a bottle tightly corked ; saturate a cloth and apply to seat of pain.

That form of conjunctivitis (sore eyes), which occurs in new-born infants, is in the vast majority of cases, easily removed by lukewarm water, or by such simple astringents as alum and borax. (F. 193, 215, may be properly kept in the house for ordinary sore eyes.) Of course severe cases require skilled treatment, but in all ordinary cases careful wiping away of the secretion, the use of the alum solution, and the greasing of the skin to avoid excoriations, are in order. For œdematous inflammation with little purulent or mucous secretion, but with the tissues loaded with serum, a dilute wash of the witch hazel extract acts very beneficially.

The teeth of children when they are pressing on the gums and trying to make their way out, should sometimes be lanced by cutting the gums. Cut down to the new tooth until it is felt under the lancet ; for incisors and cuspids a straight line ; for molars a cross cut.

The best way to do it is—let the operator and nurse

sit opposite each other, close together; the child is laid down face upwards, its head in the operator's lap, and its feet in the nurse's lap; the nurse holds the limbs of the child quietly; with his left hand the operator takes the jaw between his fingers, and then slowly and firmly does the cutting. As the child is still, there is no false cut.

SPRAINS caused by a twisting of the ankle cause very much pain, although there is no displacement of bone. When it first occurs, put the foot and ankle in hot water and let it remain for an hour in water as hot as can be borne; then wrap the part in several folds of flannel which have been wrung out of hot water, and cover it with a dry bandage, and let it rest for several days, keeping it elevated as high as may be comfortable. When first used again, support the joint by strapping. Strips of adhesive plaster cut an inch wide, may be applied both above and below the joint. It may be best to renew the straps every day,—the hair should be shaved off before the plaster is applied.

There are many LITTLE AILMENTS that may be cured or relieved by regimen, or by such articles as are in every house.

WATER.

A glass of HOT WATER taken in the morning before breakfast washes off a coating which is sometimes adhering to the lining membrane of the stomach, and affecting the digestion.

HOT WATER after continuous application renders great service to the WEARY EYE and cures the slighter maladies of the eye. If an eye is contused and blackened, foment the parts continually with hot water until the pain ceases, then keep the eye wet with a lotion, or bind on a bit of lean, fresh beef, to remove the dark discolored spot.

The itching of pruritis may be much relieved by the application of a cloth wet in hot water.

The HOT FOOT BATH is especially efficacious for some HEADACHES. If the head is filled with blood and the temples throb, soak the feet in very HOT WATER in which a spoonful of ground mustard or of salt has been stirred. The blood will be drawn from the head and relief obtained.

For those who are troubled with EXCESSIVE SWEATING, tepid sponging of the neck, face, chest and hands with equal parts of vinegar and water at bedtime is useful and agreeable.

CONVULSIONS may frequently be cut short by turning the patient on the left side ; but as soon as possible put the feet in a basin of warm water in which is a little mustard, and apply a cloth saturated with cold water to the forehead.

A woman who suffers acute pain in the pelvic region a few days antecedent to the menstrual flux, should take a WARM SITZ BATH of fifteen minutes' duration before retiring at night.

The ENEMA OF TEPID WATER may be useful in constipation, and in looseness of bowels, in spasmodic colic, and in painful menstruation ; also for piles. The temperature of the enema should be agreeable to the patient.

The itching that accompanies many skin diseases is much reduced by a warm bath containing a handful of borax, and a handful of bicarbonate of soda, in about thirty gallons of water.

Those who practice daily bathing, and indulge freely in COLD WATER, are seldom troubled with a cold. Frequent bathing, the head being well dipped, will brace the system and render a person proof against draughts.

There are many obstinate affections of the head that have been known to give way to affusion of COLD WATER upon the part. For inflammation of the brain, headache, earache, drunkenness, delirium tremans, the delirium of fever, epilepsy, rheumatism of the head, diseases of the eye, deafness, loss of smell and taste, and in nose bleed this remedy may be brought to bear. One mode of taking the HEAD BATH is for the patient to lie down, placing the back of his head in a shallow dish filled only an inch or two with water.

The WET GIRDLE is a useful medical appliance to give tone and strength to certain parts. Two and a half or three yards of good toweling with tapes arranged at one end, the corners of which have been turned over so as to form a point, is a good girdle. It should pass about three times around the body ; one-half having been wet and put on so as to have two thicknesses of the wet part upon the abdomen and one upon the back. The girdle may be worn every day, but the folded wet sheet is used for a time in febrile diseases, such as inflammation of the lungs, or of the bowels, colic, cholera morbus, &c. Fold a common coarse sheet four double ; wet two thicknesses of this in cold water to come next the body ; have the patient lie in bed with the four thicknesses around her, using warm bricks, bottles, &c., for the feet.

A table spoonful of CHARCOAL powdered, stirred into a glass of water and drank at once, is excellent in many cases of headache from SOUR STOMACH, FLATULENCE, &c.

Children who complain of choking sensations in the throat (caused by worms), may find relief from swallowing salt and water.

Those who are suffering from DYSENTERY should have

a little WHEAT FLOUR stirred into the water that they drink.

TAR WATER.

Every body ought to have TAR WATER in the house. It is made by adding one pint of wood tar to four pints of cold water, mixing thoroughly and shaking frequently during twenty-four hours, and then filtering the water which may be poured from the tar. Given internally it is stimulative in its action, and acts somewhat upon the kidneys ; is useful for cough and hoarseness, and for incipient urinary difficulty ; locally applied it is slightly astringent, antiseptic and disinfectant ; and by destroying the putrefactive germs, it prevents or restrains the process of suppuration. It is especially useful in puerperal septic diseases, as it is antiseptic and disinfectant ; the resinous principle which it contains, exerts a healing action upon the genital lesions, and suppuration is prevented. It may be used three times a day as a vaginal wash during the lying-in period, and cloths used to protect the vulva and receive the discharges should be moistened with it. It is a useful local application in the treatment of various diseases of the vulva and vagina, especially for the horrible itching of pruritis. Its use renders innoxuous the irritating discharges, and its sedative and alterative action restrains and stops the morbid process. It has a curative value in skin diseases, and in general it may be used in the various cases where carbolic acid is usually prescribed. Other medicine may be dissolved in it.

SALT WATER.

Salt is a promoter of health and longevity, and people generally who like salt, vinegar, &c., should be allowed to gratify their taste. If the blood is too rich, salt may

restore it to a normal condition; and may restore to it the needed elements if the blood is impoverished. One of the best remedies for SPITTING OF BLOOD is to drink a little salt water.

For persistent bleeding from the nose, cut a piece of raw fat salt pork, about four inches long, and near half an inch thick and over half an inch wide, wedge shaped at the ends, and force it through the nostril clear back to the pharynx.

A teaspoonful of salt taken just before a fit of the ague may effectually break up an intermittent fever, and prevent a recurrence of the chills.

A spoonful of vinegar with salt in it is an excellent remedy for dysentery.

CARBONATE OF SODA AND WATER.

Probably the anesthetic, antiseptic, and disinfectant property of bicarbonate of soda is due to the ready disengagement of carbonic acid from it. For BURNS AND SCALDS where the skin is not broken, powdered bicarbonate of soda may be strewn over the burned parts. If the burns are deep and attended with much suppuration, linen rags sprinkled with a solution of the soda (1 to 50) should be laid on, and as soon as these rags become dry, they should be replaced by others, or be moistened again in the solution. But for most burns the rags should be kept on constantly, and moistened by pouring the solution over them, as changing the compresses would cause more suppuration and delay the healing process.

If a hand or foot is burned, and soda, &c., is not obtainable, it may be kept immersed for a considerable time in cold water with a salutary effect.

A teaspoonful of baking soda taken each day, dissolved

in a pint of water, is a good remedy for habitual constipation.

HONEY AND TAR.

"For the BITES of REPTILES (rattlesnakes, moccasins, &c.), give the patient about a gill of strained honey every ten or fifteen minutes until vomiting is produced."

A table spoonful of powdered charcoal mixed with honey, milk, or cold water, and taken every morning will tend to cure any one who is troubled with either constipation or diarrhœa.

OIL.

The application of OIL to the whole surface of the body is a simple method of treatment of such infantile complaints as ATROPHY, BRONCHITIS, CONVULSIONS, DIARRHŒA, and FEBRILE DISTURBANCE generally. Smear SALAD OIL all over, from the crown of the head to the toes, three or four times a day.

For PRURITIS ANI rub on linseed oil freely at bedtime each night.

SPIRITS NITRE.

For RHUS POISONING (poison oak) apply sweet SPIRITS OF NITRE. Where the discharge of urine is attended with heat and pain, pound a handful of melon or pumpkin seed with a lump of white sugar, add a quart of boiling water, then add half an ounce of spirits of nitre and rub them together. A teacupful may be taken every two hours by adults.

OTHER REMEDIES, REGIMEN, &C.

For STRANGURY use bee tea made by pouring a pint of boiling water on fifteen or twenty honey bees.

For ERYSIPELAS apply cranberries locally, either cooked or uncooked. Another good local application for erysip-

elas is elderflower tea. Linen cloths wet with the cold infusion should be applied, and before they are dry should be wrung out of clean water, then dipped in the infusion and reapplied. The patient should also drink some of the elder flower tea. (F. 177.)

For bee and wasp stings apply the tincture of arnica, or sweet oil.

Lean fresh meat is the best absorbant substance to apply to relieve the pain of a wasp sting.

"To give relief to a child that has the earache close the mouth and blow into the nose."

Children suffering from whooping cough should inhale the vapor of turpentine. Place this on plates and allow these to stand in the room.

Where there are suppurative discharges from the ear, the dry dressing with absorbent cotton, after dry cleansing with the same, protects the wound from the air, and attracts the discharge from the middle ear. It is mildly stimulant and conduces to healing.

For soft corns wear loose shoes, and every morning place a little absorbant cotton between the toes.

For mosquito bites apply a mixture of carbolic acid and glycerine in the proportion of one of the former to twenty of the latter.

For the vomiting which often complicates cases of consumption and chronic bronchitis, give three or four grains of alum in a little ginger tea every three or four hours.

Inhalations of steam are useful in quinsy; and all affections of the throat that are painful, are much relieved by inhaling steam impregnated with the oil of peppermint.

Tea and coffee are of some value in nervous head-

aches produced by cerebral congestion, and are indicated when the face is flushed.

A weak solution of COMMON SALT snuffed up into the nose daily, is a remedy for CHRONIC CATARRH ; if a decoction of GREEN TEA is snuffed up immediately afterward the remedy is more effectual.

Cold tea is a good mild astringent application to sore eyes.

Patients who suffer at night from cramps may find relief by having the head of the bed raised. Cause the head of the bed to be raised the thickness of two bricks.

Those persons who are troubled with dizziness after smoking early in the morning, may avoid it generally by not smoking until after eating.

To remove needles, nails, &c., from the extremities, make a small incision at the place of entrance through the skin, and with an obtuse pointed stick, and the stronger solution of carbolic acid on the end of it, by a boring action penetrate to the necessary depth, occasionally making search with a metalic probe to learn of its whereabouts. When reached remove with small forceps.

For PRURITIS PUDENDI, NEURALGIA, TOOTHACHE, SICKNESS and vomiting, when these are due to the pregnant state, apply a blister to the back, over the fourth and fifth dorsal vertebra.

Children who are exceedingly SHORT SIGHTED, may by WEARING GLASSES be benefitted, not only physically but mentally ; becoming more active and lively and less reserved and tacturn. A child may be thought a dullard, and to have no aptitude for observation or learning, because his misfortune is to have bad sight ; and such a character may be fastened upon him for life, because in

his young days he was cut off from the enjoyment of the visible world which his fellows were favored with.

Occulists say that when with the arrival of middle life the focusing power of the eye declines so far that at the usual distance for reading, a sufficient adjusting force no longer exists, it is the preferable thing to put on WEAK MAGNIFYING GLASSES, to take off strain, rather than to postpone their use as long as possible. My own opinion is that when a man can, by sitting with his back to the window and holding a book in the light, at the usual distance from the eye, read the fine print of the newspapers, it is better to avoid wearing magnifying glasses. But we should always be careful to have the light shine on the paper, and not on our eyes when we are reading.

Many invalids, especially those who suffer from uterine disease, are distressed to find that they begin to fail to command the services of their eyes. When persons are recovering from any severe illness such as fever, or from protracted exhaustion, or after prolonged lactation, or watching with invalids, or great loss of sleep; where there has been much grief and weeping, or a severe mental strain, or loss of blood, or in severe or chronic dyspepsia, impaired eye power is pretty sure to appear. The essential condition to recovery lies in restoration to vigor, and sound health, and habits.

They can probably develop and recover their ocular energy by the graduated use of their eyes, beginning with short periods and advancing by small additions.

Ladies that suffer from painful menstruation should not read in bed at the time of the menstrual flow. Weakly persons should not read while lying down; and to them umbrellas, and parasols, and colored glasses become needful as protection from the sun and wind. For such

it is hurtful to read in railway cars or in carriages ; and to them an atmosphere of smoke, or the air of an ill ventilated, crowded, or brightly lighted room is injurious.

For SLEEPLESSNESS the best remedy is to so REGULATE THE BREATHING that it shall induce the right circulation in the brain, and the repose of the faculties. In breathing have the inspirations and expirations of equal length, and it will at least conduce to the repose of the brain.

For a SLIGHT ILLNESS all that you need to do very often is to breathe full, so as to make deep inspirations for half an hour ; and you can rear healthy children if you can secure to them good round chests. To do this, first measure each of them with a tape ; then teach them to practice forced inspiration through the nostrils several times a day ; offer a prize for the first inch gained in circumference. Flat chested children will soon grow round and full, and the breathing space large. The result will be good health of the children.

A child not more than four years old is sometimes afflicted with DIABETIS ; this is usually due to farinaceous food, and the child should be debarred from starchy food and sugar.

One important means to arrest BLEEDING FROM THE NOSE is to put a tight ligature on a finger or on a larger limb. An attempt may also be made to check the hemorrhage by firmly grasping the nose with the finger and thumb, so as to prevent any air from passing through the cavity.

A GARGLE of strong BLACK PEPPER TEA used freely will sometimes be an effectual remedy for APHONIA, when the patient is not able to speak louder than a whisper.

CHAPTER IV.

DIETETICS—FOOD FOR CHILDREN.

But little pure milk can be obtained in cities, and a substitute may sometimes be used ; but where good milk can be obtained, it may usually be made the principal food of young persons.

The mother's milk, if the mothers are healthy, is the best food for infants ; and those that nurse should not as a general rule be weaned during the summer months, when diarrhœas most prevail. When the mother has a sufficient quantity of milk, an infant requires and should receive no other food but breast milk until the sixth and perhaps the ninth month, when other food than breast milk must be provided. New-born babies until the age of twenty-one days should be fed with one part of milk to three of water ; between the ages of three and six weeks, with one of milk and two of water ; from six weeks to three months, two of milk to three of water ; at three months, half milk and half water ; at six months three of milk and one of water. It should be good new milk, and the water should be warm, or only hot enough to bring the temperature to that of breast milk.

This diet is better than any variety of starch food, but if the best milk that is obtainable does not agree well with the child, a light gruel made from any of the derivatives of starch may be substituted for water in the above admixtures. If a feeding bottle is used, the food should be given at regular intervals, as has been heretofore

directed in regard to nursing. As soon as the child's meal is over, the tube should be removed from its mouth. The bottle and teat should be thoroughly washed after each meal, and the former always kept in a basin of cold water when not in use. A sweet feeding bottle is of great importance, and neglect of scrupulous attention to it is a frequent cause of sickness in a child.

A few more general directions will be given to afford some guide under varying circumstances.

The degree of dilution of the milk may vary with the richness of the milk used.

When the mother gives evidence of feebleness it may be best to wean the child at six months, or even sooner if the mother evidently suffers from lactation. If the mother's health is robust it may be well to nurse it to the twelfth or thirteenth month, but we should always endeavor to know whether the child thrives best on the mother's milk. Before the twelfth month she should gradually diminish the allowance of the breast, and increase the supply of suitable food; perhaps suckling the child twice in the twenty-four hours, and otherwise feeding it at proper intervals.

If the child is weaned at seven or eight months or later, it may take for a meal a breakfast-cup full of milk to which is added a teaspoonful of lime water, or a weak solution of soda; and sometimes it may take the yolk of an egg well beaten up in a teacupful of milk, or a dessert spoonful of pearl barley jelly dissolved in a breakfast-cup full of warm milk, and slightly sweetened with white sugar.

FOOD FOR INFANTS OR FOR THE SICK should neither be rewarmed nor kept warm on a stove or in an oven, especially if either sugar or salt has been added to the composition; it is better to prepare no more than is required at

once, but if any should remain and be used, let it be brought to a proper warmth by the addition of a little hot water, broth, or gruel, as the case may be.

Food made of bread so as to constitute pap or PANADA has a great tendency to become sour, and a quantity only sufficient for a single meal should be made at a time.

OATMEAL and INDIAN MEAL have a loosening effect upon the bowels, but these as well as wheaten bread, contain more nutritive matter than sago, tapioca, and similar substances which may be regarded as modifications of starch.

For the sick have hot things very hot, and cold things very cold. Food should never be prepared in the presence of the sick, nor so that the smell of cooking be allowed to reach them if it can be avoided.

Never taste of the patient's food in her presence or with her spoon ; give food regularly, but in most cases the patient should not be roused from sleep for food ; some light food at night will often serve to send the patient to sleep.

Rice forms an excellent diet for the sick and for convalescents.

COOKING FOR THE SICK AND FOR YOUNG PERSONS.

PRELIMINARY REMARKS. Cleanliness is eminently essential in cooking for the sick and for infants. The vessel in which milk or gruel is boiled should not be used for anything greasy or seasoned ; a sauce pan in which broth has been made, flavored perhaps with onions or parsley, unless very nicely cleaned will impart a disagreeable taste to delicate food. Whatever vessel is used the food should not be allowed to remain in it, but should be poured out as soon as done, and the vessel put to soak in

cold water. If it is of tin it should soon be cleansed with wood ashes, but enameled sauce pans or granatized iron ware may be washed clean ; when taken down for use wipe with a clean, dry cloth.

For stirring use either a silver or wooden spoon ; not one of iron or other metal.

The earthenware dishes, basins or whatever else may be used for keeping food already cooked, or for milk, should be scalded after using, made perfectly dry with a clean cloth, and left to become quite cold before milk broth or whatever it may be, is put into them. For preserving liquids (broth, gruel, or milk), a wide, shallow vessel is better than a thin, narrow one ; milk should never be kept in a jug ; cooked food should not be shut in with a lid ; a hair sieve, or wire cover, or common colander may preserve from cats, mice, slugs, &c.

The cake of fat which collects on the top of broth tends to preserve the liquor while it remains unbroken ; but if the skin or fat at top is broken, and if the broth or gruel is designed for use at a subsequent meal, the fat should be removed, and the remainder should be transferred to a clean, dry vessel.

FOOD FOR CONVALESCENTS.

Many questions in regard to diet are left by the physician to the nurse, especially while she has the care of convalescents. I give for her guidance a few more aphorisms and directions :

1. While it is true that as a general rule people who like salt, vinegar, &c., ought to be allowed to gratify their taste, and that the cravings of a sick person are not always to be denied, yet appetite and taste were intended to govern the choice and quantity of food in health ; and

even then, they should be guided by reason and experience. Such articles as fruit, jam, cake, cheese, butter, and milk may generally be taken if there is a craving for them, but if they are not digested, the stomach must be consulted, and not the cravings. Milk and eggs are important articles of food, but they must not be forced upon the patient; cheese is sometimes craved; it is concentrated nutriment, but in some person's stomachs it is digestible, and it may perhaps favor digestion of other food; do not entirely disregard the desires and taste of the patient; as a rule if meat is craved it is allowable, and it is better to chew and swallow it, than it is to chew it and spit out its nutritive contents.

2. During convalescence, as soon as ANIMAL FOOD can be taken with impunity, that which is most digestible should be selected. With the exception of poultry the flesh of middle aged animals affords the most digestible food. Keeping animal food for a certain time before it is cooked lessens the density of the fibre and renders it more tender, but the utmost caution is requisite to prevent the change from advancing so far as to present the slightest trace of taint in the food.

3. GELLATINE in the form of BOUILLON or concentrated broths is valuable in fevers, &c., as an addition to other diet, as it prevents or rather retards the process of denutrition.

4. SOUR MILK is to some sick persons and convalescents an agreeable beverage, and in cases of atonic dyspepsia and many other cases, it is a good adjuvant in the treatment of slow digestion, where flatulence and a sensation of cramp in the stomach are prominent symptoms. The good effects of drinking a tumbler full or half a tumbler full of ordinary cold sour milk or BUTTERMILK, is

probably owing in a measure, to the lactic acid which it contains. It may be taken regularly half an hour after each meal, in cases of weak stomach.

5. MILK is digestible when it is drunk immediately after it is drawn from the udder of the cow or that of the goat, but it is often necessary in convalescence to dilute it in water. It may be kept for some time from souring in warm weather by adding to each quart fifteen grains of bicarbonate of soda. When there is evidence of over-acidity of the stomach, lime water may be added in any proportion up to one-half.

RAW EGG somewhat in the form of an emulsion, has been useful in certain diseases. Four raw eggs may be beaten up in a pint of cold water, a little flavoring and sugar added, and the patient may take it by sips during the day. This is a light and nutritive diet, but eggs are much less digestible in this form than when they are lightly boiled.

RAW OYSTERS are somewhat nutritive, but are not easy of digestion. LOBSTERS, CRABS, SPRAWNS, CRAYFISH, SCALLOPS, and other shell fish are more objectionable than oysters. FISH, especially of the white kind, is not stimulating; if it is simply boiled it is admissable for convalescents, and for those laboring under some acute diseases. In the decline of fevers some animal food may be given; first beef tea, chicken broth, and mutton broth, and other liquid animal decoctions; then white fish and a more generous diet.

8. The value of soups depends upon the freshness of the meat, the manner in which they are boiled, and the delicacy with which they are seasoned; for the latter any of the vegetable condiments may be used according to the taste of the consumer.

9. The nurse should know that certain articles in a certain form cannot be digested in the stomach, because they cannot be dissolved in the fluid contained there. Rich pastry, pieces of hard potato, rich puddings and dumplings, hard stringy meat, and greasy fibred meat, new bread, and rolls that are not well baked are, in general, indigestible. Pie is not essentially indigestible; indeed indigestibility cannot be affirmed of any article of food, apart from a consideration of the digestive capacity of the particular stomach, the powers of which are to be tested.

10. Some mild ESCULENT ROOTS are fitted for the use of the sick if they are boiled in two waters, but they are not well adapted to those who are liable to sour stomachs. Some vegetables, on account of their peculiar qualities, have peculiar effects as remedies. It is asserted that spinach and asparagus act as diuretics, dandelion as a tonic and laxative, tomatoes as a cholagogue, beets and turnips as a tonic, onions, garlic, and leeks as stimulants and narcotics, the red onion as a narcotic in neuralgia and insomnia, and cabbages, tomatoes, and other salad material as anti-scorbutics.

11. FRUITS produce the most diversified effects; but peaches and nectarines, very soluble pears if they are ripe, apples if they are roasted, the orange if it is fully ripe, grapes if the skin be rejected, strawberries and mulberries are pretty generally admissible.

FLUID ALIMENTS.

12. Fluid food can in most cases be taken more conveniently by suction through a BENT GLASS TUBE. After feeding, dry the mouth if the patient cannot well do it for herself.

13. Water is demanded in every disease in which a dry skin and an elevation of temperature is present. The temperature of the water may be from 60° to 50°. Small bits of ice swallowed whole are excellent to control nausea. It is refreshing and harmless.

To keep a small piece of ice from immediately melting: Cut a piece of flannel six inches square, snip one or two holes in the centre for water to run through; confine it by an elastic band about the edge of a tumbler or goblet; depress the middle of the flannel, and a small piece of ice may be kept in it for some time; bits of ice may be split off from it with a knife. Ice and water should be pure.

14. Toast water when properly prepared forms a useful beverage in the sick room. As it contains a small proportion of gluten it is slightly nutritive.

15. While febrile symptoms are present, farinaceous matters such as barley water gruel, arrow root, mucilage or sago acidulated with lemon juice, and sweetened to the taste of the patient, are most commonly suitable, but water is the most salutary diluent.

16. Gruel is less mild and demulcent than barley water, and is more likely to sour, but it is nutritive food.

17. Tea is refreshing, and may be taken in moderate quantity, provided it be not strong. Coffee may be taken largely combined with milk.

18. Beer, brandy, and other stimulants should be given only after proper medical examination and advice.

RECIPES FOR BEVERAGES AND FOOD.

FORMULA 1. FOOD FOR INFANTS.

Take of new milk, warm water, of each equal parts; table salt, sugar, of each a small quantity, to salt and sweeten it slightly; warm the milk by the water, so that

it will be of the same temperature as the mother's milk —about 90° ; the proportion of milk may be a little less than this when the infant is newly born, and should be increased as it grows older, but water must always be given with the milk. Give by means of a feeding bottle that has been properly cleansed.

2. GUM ARABIC MUCILAGE.

Take of gum Arabic one ounce, boiling water one pint ; after the gum Arabic is dissolved, add two table spoonfuls of sugar and the juice of a lemon ; cool and add ice. This may be taken as a drink in diarrhœa.

3. INFUSION OF FLAX SEED.

Take of flax seed two table spoonfuls, water one pint, sugar two table spoonfuls ; steep for an hour or more and strain, then add the juice of a lemon and set on ice. Use as a demulcent drink.

4. MILK AND CINNAMON DRINK.

Take of cinnamon one teaspoonful, boiling water one pint ; steep for a few minutes, sweeten with sugar, and mix with half a pint of milk. Good in diarrhœa.

5. VINEGAR WHEY.

Take of milk one pint, vinegar one ounce ; boil for a few minutes and separate the curd. Good in dysentery, and may be taken freely.

6. DECOCTION OF BRAN.

Take of wheat bran one pint, boiling water three pints ; let the mixture stand in a covered vessel for two hours ; strain and serve with sugar and cream. This is slightly laxative.

7. SAGE TEA.

Take of the dried leaves of sage half an ounce, boiling water one quart ; infuse for half an hour and then strain. Sugar and lemon juice may be added in the proportion required by the patient. In the same manner balm and other teas may be made.

8. A REFRESHING DRINK IN FEVERS.

Boil one ounce and a half of tamarinds, three ounces of cranberries, and two ounces of stoned raisins, in three pints of water till the water is reduced to two pints ; strain and add a bit of lemon peel, which should be removed in an hour as it gives a bitter taste if left long.

9. TOAST WATER.

Take slices of toast nicely browned, enough hot water to cover them, cover closely and let them stand until cold ; strain the water, sweeten to taste, and put a piece of ice in each glassful. If the physician thinks it safe add a little lemon juice. Good for nausea and vomiting.

10. APPLE WATER.

Take three juicy pippins or other fine flavored apples, one quart cold water ; pare and quarter the apples, but do not core them ; stew the apples to pieces in a tin or porcelain sauce-pan, closely covered ; strain the liquor at once, closely pressing the apples in the cloth ; sweeten and ice for drinking. Slightly laxative.

11. SLIPPERY ELM BARK TEA.

Break the bark into bits, pour boiling water over it, cover and let it infuse till it is cold.

12. JELLY WATER.

Take one large teaspoonful currant or other kind of

jelly, one goblet ice water; beat up well. A good drink in fever, and if of wild cherry or blackberry jelly it is very good for those suffering from diarrhœa.

13. CORN TEA.

Take a cupful of dry corn, parch it brown, grind it, or pound it in a mortar; pour over it two cups of boiling water, and steep for a few minutes. This is nutritious.

14. TARTAR WHEY.

Take of milk one quart, cream of tartar half an ounce; boil until the curd separates. This is somewhat laxative.

15. HERB TEAS.

Take of the dried or green leaves about one ounce, boiling water one pint, and let them stand until cold. Catnip tea is good for colds and coughs in infants; spearmint and peppermint tea is good for disordered stomach and bowels; pennyroyal for a cold if recently taken; chamomile tea is a good tonic, blackberry root tea is good for summer complaint, raspberry leaves (green) for dysentery, sweet apple tree bark tea for a child's cankered sore mouth, pumpkin seed and parsley tea for suppression of urine; mullien leaf tea is good in kidney complaints; mullien leaves infused in milk makes a medicinal drink in a case of phthisis.

16. MILK AND ISINGLASS (GELATIN.)

Dissolve a little gelatin in water and mix with half a pint of milk. Boil and sweeten to taste.

17. EFFERVESCING LEMONADE.

Take the juice of a large lemon, two or three teaspoonfuls of sugar, half a pint of spring water; add half a small teaspoonful of carbonate of soda. Stir and drink while effervescing.

18. INDIAN MEAL GRUEL.

Take of Indian meal one small teacupful, wheat flour one table spoonful, boiling water two quarts; wet the meal and flour to a smooth paste, and stir into the water while it is boiling. Boil slowly for thirty or forty minutes, frequently stirring from the bottom; salt to taste; add sugar and nutmeg if you like; if too thick reduce with boiling water to the desired consistency; if a laxative effect is desired omit the flour. Raisins may be boiled with the gruel, and cream may be added if desired.

19. OATMEAL GRUEL

is made in the same way as the above. Gruel drank warm at bed time is a soothing remedy for a bad cold.

20. MILK AND RICE GRUEL.

Take boiling milk one quart, ground rice two table spoonfuls wet with cold milk, salt one salt spoonful; stir in the rice paste and boil ten minutes, stirring constantly. Season with sugar and nutmeg, and eat warm with cream.

21. TAPIOCA JELLY.

Take of tapioca two spoonfuls, water one pint; boil gently for an hour, or until it assumes a jelly-like appearance. Add sugar and nutmeg with lemon juice to suit the taste of the patient.

22. RICE GRUEL.

Take of ground rice one ounce, cinnamon one drachm, water one quart; boil for thirty minutes, adding the cinnamon near the conclusion. Strain and sweeten it.

23. PANADA.

Take of wheat bread one ounce, cinnamon one drachm (or if preferred a little mace), water one pint; boil with-

out stirring until they mix and turn smooth. Then add a grate of nutmeg, a small piece of butter, and sugar according to taste. Some add a table spoonful of wine.

24. BREAD JELLY.

Steep stale bread in boiling water, and pass through a fine sieve while still hot. This is a light, nourishing diet for a weak stomach, which may be taken alone, or after being boiled with milk.

25. RICE CREAM..

Steep a quarter of a pound of whole rice in milk, and put in a sieve to drain and cool ; mix the rice with a gill of cream whisked to a froth, and a little powdered sugar, and a teaspoonful of lemon juice. Some add wine but it is not necessary.

26. TO MAKE FAT.

The diet to be prescribed when the aim is to produce increased weight should include such articles as fat meats, butter, cream, milk, cocoa, chocolate, bread, potatoes, peas, parsnips, beets, farinaceous and flour puddings, pastry, almond puddings, and biscuit, custards, oatmeal porridge, sugar and sweets, porter, &c.

27. MILK PORRIDGE.

Take wheat flour two table spoonfuls, milk one pint, water one pint ; mix the flour with cold water to form a thin paste ; put the milk and water over the fire, and when they come to a boiling point add the paste, carefully stirring.

28. FRENCH MILK PORRIDGE.

Stir some oatmeal and water together, let the mixture stand to clear, and pour off the water ; then put more water to the meal, stir it well and let it stand till the next

day ; strain through a fine sieve and boil the water, adding milk while so doing. Let the proportion of milk exceed one-half. With toast this is good diet for the sick.

29. LIME WATER AND MILK.

Take of lime water one to two ounces, milk four ounces. This will sometimes be retained on the stomach when other food is rejected. The addition of fifteen grains of bicarbonate of soda has a similar effect if added to a quart of fresh milk, and prevents milk from turning sour for several hours.

30. MUSH AND MILK.

Take of Indian meal one coffee cupful, water two quarts, salt to taste ; when the water is boiling, stir the meal into it, adding meal gradually till it thickens so that it is difficult to stir. It should be permitted to remain where it will cook slowly for twenty or thirty minutes, stirred often with a pudding stick. Eat with milk.

31. LEMON JELLY.

Soak half a box of gelatin in a cup of cold water ; steep the grated or pared rind of two lemons in a pint of boiling water for ten minutes, add the gelatin, one cup of sugar, and four table spoonfuls of lemon juice. When all is dissolved, strain and place in a vessel to cool.

32. ALUM WHEY.

Take alum one teaspoonful, milk one pint ; boil together and strain to separate the curd.

33. TABLE TEA.

Allow a small teaspoonful of tea to each half pint of water. After rinsing the teapot with boiling water put in the tea, and let it stand a few minutes in the steaming

pot ; add the water freshly boiling, and let it stand where it will keep hot three or four minutes.

34. NUTRITIOUS COFFEE.

Take one pint of nearly boiling milk, and add half an ounce of freshly ground coffee, and boil together for three minutes. Clear it by pouring into a cup and dashing back. Add a little isinglass dissolved in water and leave to settle. If preferred, beat up an egg with sugar and pour the coffee upon it.

35. NUTRITIOUS LAXATIVE.

Take one table spoonful of lump magnesia, pulverized, one teaspoonful of saleratus or soda, sugar and salt as desired, and stir them in a quart of hot milk porridge made in the usual way. This will operate as an antacid and as physic if taken during the day ; at the same time it is nourishing.

36. POTUS IMPERIALIS.

Take half an ounce of cream tartar, the juice of one lemon, and two table spoonfuls of sugar ; pour on them a quart of boiling water, and let it stand on ice till cold. If this is drank it will increase the action of the kidneys.

37. VEGETABLE SOUP.

Take one potato, one turnip, one onion ; let them be sliced and boiled in one quart of water for an hour. Add as much salt and pepper as is agreeable, and pour the whole upon dry toast. Add butter if desired.

38. SWEET PTISAN, FOR A DRINK IN DYSENTERY.

Take of sheep's suet two ounces, milk one pint, starch half an ounce, water one pint ; boil slowly for fifteen minutes.

39. MUCILAGE OF STARCH.

Take of starch one ounce, powdered cinnamon one drachm, gum Arabic one ounce, boiling water three pints; boil until reduced to two-thirds and strain. This is a useful drink in dysentery.

40. BOILED FLOUR.

Take of fine wheat flour a pound, tie it up in a linen cloth, boil until it becomes a hard dry mass. A table spoonful of this may be grated off and used to make milk porridge.

41. TOAST.

The bread must be cut thin, the crust trimmed off, and then the slice held in a toaster over a bed of coals, and turned from side to side till all the moisture is removed, then allowed to become a golden brown. Serve it on a hot plate as soon as it is done.

42. VERY NICE PANADA.

Take three Boston crackers, split them and arrange them in a bowl in layers, sugar and salt scattered among them; cover with boiling water, and set in a warm place with a close cover over the bowl, to remain one hour. A little nutmeg should be added, and it should be eaten from the bowl.

43. HOW TO PREPARE ARROW ROOT.

Put two teaspoonfuls of the powder into a basin, mix them smooth with a few teaspoonfuls of cold water, and let another person pour boiling water over the mixture while you continue to stir it until it forms a starchy looking substance. It may be used in the same manner as gruel, a little milk and salt being added to it.

44. ARROW ROOT CUSTARD.

Take two teaspoonfuls arrow root, wet them up with a little cold milk ; stir for three minutes in a cup of boiling milk, take from the fire and stir in an egg, already well beaten ; boil two minutes longer, flavor with vanilla or rose water, and pour into moulds.

45. BOILED RICE AND COCOA-NUT.

Take one teacupful of rice, one heaping teaspoonful of cocoa-nut, and the milk from the centre of the nut ; one quart of water, one pint of milk, and salt to taste ; boil three or four hours in a double boiler. If it boils away too much add more water. Serve with canned strawberries for sauce.

46. BREAD JELLY FOR CHILDREN WEANED.

Take a quantity of the soft part of a loaf, break it up, cover it with boiling water and allow it to soak for several hours ; the water is then to be poured off completely, and fresh water added ; place the mixture on the fire and allow it to boil until it becomes smooth. The water is then to be pressed out, and the bread on cooling will form a thick jelly. Mix a portion of this with sugared milk and water as it is wanted.

47. HOW TO COOK RICE.

Erratum. On page 268, bottom line, for 47 read 40.

In preparing it only just enough cold water should be poured on to prevent from burning at the bottom of the pot, which should have a close fitting cover, and with a moderate fire the rice is steamed rather than boiled until it is nearly done ; then the cover is taken off, the surplus steam and moisture allowed to escape, and the rice turns out a mass of snow white kernels.

48. OYSTER BROTH.

Take half a pint of oysters, cut into small pieces, put them into a gill of water and let them simmer for eight or ten minutes. Skim and strain, then add a little new milk, salt, and pepper.

49. POACHED EGG.

A fresh egg broken into boiling water and cooked till the white is congealed, then laid on a piece of newly toasted bread dipped in hot milk and buttered, is an apetizing dish for convalescents.

50. CHICKEN TEA.

To relieve the nausea and vomiting of cholera morbus: Kill a chicken, and strip off the feathers as soon as possible after it is killed; boil the wings and legs in a little water. This, if simply seasoned with a little salt, will be acceptable to the stomach.

51. RESTORATION SOUP FOR INVALIDS.

Take one pound of newly killed beef or fowl, chop it fine; add one-half pint of pure water, and perhaps four or five drops of pure muriatic acid, one-half teaspoonful of common salt, and stir well together. After three hours the whole may be thrown in a sieve, and the fluid allowed to pass through on slight pressure; on the flesh residue in the sieve pour slowly one-half teacupful of water, and let it run slowly through the sieve while squeezing the meat. There will thus be obtained about ten ounces of cold juice (extract of meat), having a pleasant taste of soup, of which a wineglassful may be taken at pleasure. If preferred one part of meat may be taken with two parts of white sugar, one teaspoonful every three hours. The two may be pounded in a mortar.

52. BEEF TEA.

Take one pound of beef minced very fine, and put it in a common earthenware pot with a pint and a half of cold water; stand the pot on the stove, so that it may simmer for at least three hours.

53. CHICKEN BROTH.

When it is desired that chicken broth should be very nutritious, take an old fowl; cut up and break the bones with a mallet; cover with three or four pints of cold water, and add some rice or tapioca; salt to taste and boil for two hours.

54. MUTTON AND VEAL BROTH.

Take of either mutton, beef, or veal one pound and a half, cold water two quarts, rice two ounces; simmer for four hours, boil for a few minutes, strain and serve.

55. EGGS, CREAM, AND EXTRACT OF BEEF.

Wash two ounces of the best pearl sago until the water poured from it is clear, then stir the sago in half a pint of water until it is tender and very thick; mix with it half a pint of good boiling cream, and the yolks of four fresh eggs, and mingle the whole carefully with one quart of good beef tea, which should be boiling; serve. Good in cases of lingering convalescence after acute diseases.

56. BEEF TEA MADE NUTRITIOUS.

To a pint of beef tea add bread crumbs, and boil for five minutes; or mix a table spoonful of cooked oatmeal or rice with two of boiling water, add a cupful of strong beef tea and boil a few moments. Serve with toast.

57. MUTTON BROTH.

To a pound of meat cut in small pieces put a quart of cold water, boil slowly three or four hours in a closely

covered kettle till the meat falls to pieces ; strain, remove all fat, and put in two table spoonfuls of rice that has been soaked half an hour ; simmer until the rice is well cooked, season with salt, and serve with toasted cracker.

58. BEEF TEA.

Take lean beef, cut into shreds one pound, cold water one quart ; boil for thirty minutes, taking off the scum as it rises ; when it grows cold, strain.

59. ESSENCE OF BEEF.

Take of lean beef sliced, one pound ; put into a bottle or fruit jar, cork it loosely and place it in a pot of cold water (attaching the neck by means of a string to the handle of the vessel.) Boil for two hours and then decant the liquor and skim it.

60. BEEF JUICE.

Take a nice juicy steak, remove all the fat, broil it over a bright coal fire long enough to heat it through ; then with a meat or lemon squeezer press out the juice into a cup ; set in hot water. Remove any fat that may be in it ; shake the salt box slightly over it and serve.

I shall not refer to the different alimentary preparations now thrown in the market, which come with printed directions on the packages, farther than to say that I have a favorable opinion of Carnrick's Soluble food for infants. I have tested it well.

CHAPTER V.

THE ART OF PRESCRIBING.

The nurse will not often prescribe medicine, but it may be of use to know how to read the prescriptions of others, and to know a few of the general rules or principles upon which physicians act in trying to produce the greatest curative effect with least possible inconvenience.

THE DOSES OF MEDICINE.

Generally in the following prescriptions the ordinary dose for an adult is stated. The young require a smaller dose than older persons, or those at maturity; and the very aged cannot bear as large doses as the middle aged. The following is designed to exhibit the dose proportioned to the age; the dose for a person of middle age being one drachm:

That for a person					from	14	to	21	will be	2 scruples.
"	"	"	"	"		7	"	14	" "	½ a drachm.
"	"	"	"	"		4	"	7	" "	1 scruple.
"	"	"	"		of	4	years		" "	15 grains.
"	"	"	"	"		3	"		" "	10 "
"	"	"	"	"		2	"		" "	8 "
"	"	"	"	"		1	"		" "	5 "

There are some medicines however which require to be given to children in much larger proportioned doses than those stated above. For example, a child of three years might require half as much castor oil for a dose as an adult. Females usually require smaller doses than males,

and those of sanguine temperament than the lymphatic and phlegmatic. Idiosyncracies sometimes exist in individuals rendering them peculiarly susceptible to the action of certain remedies, or causing a medicine to act on an individual in a manner wholly different from the ordinary mode.

In general the susceptibility to the action of a medicine is diminished by its frequent use ; some medicines are of variable strength, and all these considerations should lead to great care in prescribing ; some medicines require more care than others, however, and such formula will be selected for insertion here as may be pretty generally used with safety. I believe they do not require more effort to adapt them to particular cases than ordinary patent medicines.

MODE OF ADMINISTERING MEDICINE.

Medicines given together should be combined with a definite purpose in regard to each article in the formula. Remedies of the same general character may be given together in order to increase their efficacy. In F. 74 there are several aromatics because a small amount of each when combined, will be more certain in their action than a large amount of one kind, and at the same time they will be less irritating.

The effects of one medicine are in many cases increased by the influence of another in augmenting the natural susceptibility of the system to its action.

One medicine is given with another to counteract the more disagreeable effects of the more active one.

One medicine is sometimes given as a vehicle for another ; perhaps to cover the disagreeable taste or odor and to render the medicine acceptable to the stomach.

For example, the aromatics and ammonia in F. 74 are much more agreeable to the stomach than either of them would be separately.

In the mixing of medicines care should be taken that they are neither chemically nor physiologically incompatible. When the action of an acid is desired, an alkali should not be given at the same time, as they unite to form a compound different from either. A soluble salt should not be given with another, or with an acid that would decompose it, and produce an inert compound. If medicines are given that have an apparent physiological incompatibility, it should be with a full understanding of their effects, and with reference to them. The FORM in which medicine is given must vary according to the nature of the medicine, the taste of the patient, or the condition of his stomach, as it is always desirable to have it so that it can be swallowed without difficulty.

The physician should always write his prescription with neatness, order and precision, but it will be found an advantage to the nurse to have a ready comprehension of the symbols and abbreviations used in writing prescriptions. Hence I have appended a table designed to explain the signs and abbreviations habitually used. Ordinarily the Roman numerals are employed, and follow always the symbols to which they relate. A glossary which will include some latin terms will hereafter be added.

Sign or Abbreviation.	LATIN WORD.	ENGLISH WORD.	Abbreviation.	LATIN WORD.	ENGLISH WORD.
℔	Libra or libræ.	A pound or pounds.	Div. in p. æq.	Divitur in partes æqualis.	Divide in equal parts
℥	Uncia or unciæ.	An ounce or ounces.			
ʒ	Drachma or drachmæ	A drachm or drachms	Duo.	Duo.	Two.
℈	Scrupulus or scrupuli	A scruple or scruples	Ft.	Fiat.	Let them be made.
aa.	Ana.	Of each.	Garg.	Gargarisma	A gargle
Add.	Adda.	Add to it.	Gr.	Granum or granæ.	A grain or grains.
Ad. saturand	Ad saturandum.	Until saturated.	Gtt. or gut.	Gutta or guttæ.	A drop or drops.
Ad. lib.	Ad libitum.	At pleasure.	Haust.	Haustus.	A draught.
Alt. hor.	Alternis horis.	Alternate hours.	Ind.	Indico.	Daily.
Ante Cib.	Ante cibum.	Before food.	Infus.	Infusum.	An infusion.
Aq. ferv.	Aqua fervens.	Hot water.	Inject.	Injectio.	An injection.
Aq. pluv.	Aqua pluvialis.	Rain water.	Min. or M.	Minim.	1-60 of a fluid drachm
Aq. pur.	Aqu pura.	Pure water.	M.	Misce.	Mix
Aq. tepida.	Aqua tepida.	Tepid water.	Mass.	Massa.	A mass
Bis die.	Bis die.	Twice a day.	Mist.	Mistura.	A mixture.
Bull.	Bulliat.	Let it boil.	Pil.	Pilula or pilulæ.	A pill or pills.
Cap.	Copiat.	Let him take.	ppt.	Preparata.	Prepared.
Coch. mag.	Cochlear magmum.	A large spoonful.	Pulv.	Pulvis.	A powder.
Coch. parv.	Cochlear parvum.	A tea spoonful.	P. R. N.	Pro re nata.	As occasion requires.
Colent.	Colentur.	Let them be strained	q. s.	Quantum sufficit.	A sufficient quantity.
Collyr.	Collyrium.	An eye water.	℞	Recipe.	Take.
Comp. or Co.	Compositus.	Compound.	Rad.	Radix.	A root.
Contus.	Contusus.	Bruised or crushed.	S. or Sig.	Signatur.	Write.
Cong.	Congius or Congii.	A gallon or gallons.	ss.	Semisis.	A half.
Decoct.	Decoctum.	A decoction.	Tinct.	Tinctura.	A tincture.
Det.	Detur.	Let it be given	2 dis.	Duo dis.	Every two hours.
Dil.	Dilutus.	Dilute.	f. ʒ or fl.	Fluid uncia or unciæ.	Fluid oz or ounces.

The succeeding chapter is composed of formulæ giving numerous examples of the different forms in which prescriptions are written. Good taste requires that all directions should be in the English language, and that hieroglyphics and absurd abbreviations should be discarded as much as possible. Very many physicians write the directions in latin, and the druggist is expected to write the same in English and attach a label thus written to the bottle containing the medicine. I have given some examples of the old-form prescriptions written entirely in latin, and also some where the new notation (figures, &c.) is used. Whoever reads them over will learn how to read prescriptions; but I have given none but such as I value highly, and I have used almost every one in my practice, and tested its excellence. I advise people to obtain these rather than those patent medicines whose composition is secret. The person who desires one of these prescribed medicines can obtain it by copying the formula *accurately* and taking it to a druggist. I adopt the usual

CLASSIFICATION OF REMEDIES.

ANTACIDS neutralize acids existing in the alimentary canal, or circulating with the blood; ANTISEPTICS counteract putrefaction; ANTISPASMODICS relax spasm and calm nervous irritation; ASTRINGENTS cause vital contraction of the organic textures; ANTHELMINTICS destroy worms, or expel them from the bowels; CATHARTICS act on the bowels, producing a purgative effect; CAUSTICS destroy the life of the part upon which they act; DIAPHORETICS increase the cutaneous discharge; DIURETICS produce an increased flow of urine; EMETICS produce vomiting; EXPECTORANTS augment the secretion from the pulmonary mucous membrane; ENEMATA cause

evacuations from the rectum, &c.; EMMENAGOGUES excite the menstrual secretion; NARCOTICS affect the cerebral functions; TONICS exalt the energies of the whole system. I shall give examples of remedies which are designed to produce these several effects, besides some belonging to other classes.

Where the word teaspoon is used it signifies one holding about 55 drops of water = ℥ j. (one drachm); 1 table spoon about half an ounce, and this is written ℥ ss; one wineglass equals two ounces, written ℥ ij; one teacup equals four ounces, written ℥ jv.; one coffee cup equals eight ounces, and is written ℥ viij.

The gramme of the FRENCH METRIC SYSTEM equals about 15 grains, and this is the unit of weights. The system is of the decimal character and the latin prefixes deci, centi, milli, &c., are used to indicate its subdivisions, and the Greek deca, hecto, kilo, myria, &c., are its multiples, always on the scale of ten.

.001	gramme = 1 milligramme.
.01	gramme = 1 centigramme.
.1	gramme = 1 decigramme.
1	gramme
10	gramme = 1 decagramme.
100	gramme = 1 hectogramme.
1000	gramme = 1 kilogramme.

Physicians, many of them, prefer to employ latin names to designate the ingredients of their prescriptions, and to write the directions to the druggist in latin. I will first give a few latin prescriptions with the translation.

CHAPTER XII.

MEDICAL FORMULARY.

Formula 61. FIAT HAUSTUS. (Let a draught be made.)

℞ Magnesiæ sulphatis.....drachmas duas.
Infusi sennæ.....fluidunciam.
Syrupi rhei.....fluidrachmam.

Misce et fiat haustus, in jusculo calido, partitis vicibus sumendus.

The above prescription translated into English would read :

Take of sulphate of magnesia.....two drachms.
Infusion of senna.....one fluid ounce.
Syrup of rhubarb.....one fluid drachm.

Mix and let a draught be made to be taken in divided doses in warm broth.

The following is a convenient form and one not liable to mistakes :

℞ Magnesiæ sulph..... ℥ ij.
Syr. rhei.....f ℥ j.
Infus. sennæ.....f ℥ j. M., et fiat haustus.

S. To be taken in divided doses in warm broth.

62. FOR COLIC.

℞ Magnes. alb. ust..... ℈ j.
Tinct. fœtid.....gtt. lx.
" theb.....gtt. xx.
Aq. font..... ℥ j.

Translation.

Take Calcined magnesia.....20 grains.
Tincture of assafœtida.....60 drops.
Laudanum.....20 drops.
Water.....1 ounce. Mix.

S. Dose. 20 drops for a child, in sweetened water.

63. FOR CHOLERA INFANTUM AND DYSENTERY.

℞ Sal tart. vel carb. sod.....gr. xxx.
Gum Arabic.....
Sacch. Alb.....aa. ʒ j.
Tinct. theb.....gtt x.
Aq. Font.....ʒ iij.

Translation.

Take salt of tartar or soda.....20 grains.
Gum Arabic and loaf sugar.....each 1 drachm.
Tincture of opium (laudanum).....10 drops.
Water.....3 ounces.

To the above a drop of oil of cinnamon may be added and it may be given in doses of one teaspoonful in lime water and milk, when cholera morbus is followed by diarrhœa and dysentery.

64. FOR CROUP, &C.

℞ Tr. phytolac dec.....gtt. vj.
Tr. aconit.....gtt. iij.
Aqua.....ʒ iv. m.

Translation.

Take Tinct. of poke root.....6 drops.
Tinct. of aconite.....3 drops.
Water.....4 ounces. Mix.

Dose a teaspoonful every five or thirty minutes, as is necessary.

For a case of mammary abscess it may be given internally, and also rubbed upon the breast in the forming stage.

65. FOR CHRONIC ENLARGEMENT OF THE SPLEEN.

Errata. On page 44, for 12, 18, 23, 52, 54, 57, 61, 62, 65, read 10, 16, 18, 19, 20, 23, 25, 28. On page 43, last line, for 65 read 58.

℞ Tinct. cinch. comp.....ʒ viij.
Aq. menth. pip.....ʒ xij.
Ammon. murias.....ʒ j. M.

Translation.

Take of Compound tincture of Peruvian bark..8 ounces.
Peppermint water.....12 ounces.
Muriate of ammonia.....1 ounce. Mix

S. Dose one teaspoonful three times a day, one hour before meals.

66. CHRONIC RHEUMATISM.

℞ Pulveris guaiaci resinæ,
Potassæ nitratas.....aa. ʒ j.
Pulveris ipecacuanhæ.....gr. iij.
Opii.....gr. ij.

Fiat pulvis in charletas sex dividendus.

Translation.

Pulverized gum guiac,
Nitrate of potash.....of each 1 drachm.
Powdered ipecac.....3 grains.
Opium.....2 grains. Mix.

Divide into six powders.

S. One powder to be taken every three hours in syrup or molasses.

67. FOR SCIATICA AND FOR THE KIDNEYS.

℞ Ol. cubeba,
Ol. copaiba.....aa. f. ʒ jv.
Ol. tenebinth..... f. ʒ ij.
Spts. nit. æth..... f. ʒ vj.
Mucilagio acacia..... f. ℥ ij. M.

Translation.

Take oil of cubebs,
Oil of copaiva.....of each four fluidrachms.
Oil of turpentine.....two fluidrachms.
Spirits of nitric ether .....six fluidrachms.
Mucilage of gum Arabic.....two fluid ounces. Mix.

Mark. One teaspoonful three times a day.

68. FOR GASTRIC ULCER.

℞ Morphine sulphatis.....gr. j.
Bismuth subnitratis..... ʒ ss. M. S. Ft. Chart. No. vj.

Translation.

Take morphine.....1 grain.
Sub nitrate of bismuth.....½ drachm. Mix.

Make six powders. Mark. One powder to be taken every four hours.

ANTACIDS.

69. CARBONATE OF MAGNESIA.

℞ Magnesia carbonatis.....grs. 80.
Extracti opii liquidi.....min. 30.
Spiritus etheris.....fl. drs. 3.
Aqua mentha viridis.....ad fl. oz 6. Mix.

One fourth part occasionally. Useful where there is much oppression from flatulency.

70. CHALK MIXTURE AND HOPS.

℞ Tincture lupuli..... ℥ vj.
Tinct, cardamomi compositae.....fl. ℥ jv.
Vini ipecacuanhæ .....fl. ℥ ij.
Extractii opii liquidi.....min. xxx.
Mistura creta.....ad. fl. ℥ vj. M.

Translation.

Take tincture of hops.....6 drachms.
Compound tinct of cardamom....4 fluidrachms.
Wine of ipecac..... ....2 fluidrachms.
Liquid extract of opium.....25 minims.
Chalk mixture (add to it).....6 fluid ounces. Mix.

Mark. One teaspoonful every three or four hours. Useful in diarrhœa due to acidity in the stomach.

71. FOR HEARTBURN.

℞ Liquor magnes. carb. ..... ℥ ss.
Sp. lav. comp..... ℥ ij. M. Ft. haust.

Translation.

Take liquor of carbonate of magnesia..... ....½ ounce.
Compound spirits of lavender.....2 drachm.

Make a draught. Take immediately and repeat if necessary.

72 FOR ACIDITY OF THE STOMACH.

℞ Pepsin.....5 grains.
Sub nitrate bismuth.....5 grains.
Glycerine..... .....½ ounce. M.

Sig. After each meal

73. FOR INFANTILE COLIC.

℞ Magnesia carb ..... ℥ ij.
Tinct assafœtida ..... min. xx.
Aqua ..... ℥ ij. M.
Sig. Thirty drops and repeat every half hour until relieved.

74. FOR DISORDERED STOMACH.

℞ Aqua ammonia ..... ℥ ij.
Essence cinnamon .....
Tinct ginger ..... aa. ℥ ss.
Tinct. pimento .....
Alcohol ..... ℥ ij.
Water ..... ℥ viij. Mix.

Of this one teaspoonful may be put in a glass of water, of which the patient may take a teaspoonful every hour.

75. NAUSEA AND VOMITING.

No. 1. ℞ Bicarb. potass ..... grs. xxx.
Water ..... f. ℥ ij.
Bromide potass ..... grs. xxx. M.

No. 2. ℞ Citric acid ..... ℥ j.
Water ..... ℥ jv.
Syrup ..... f. ℥ x. M.

Add a table spoonful of No. 2 to a teaspoonful of No. 1 and drink immediately.

76. A POWDER FOR HEARTBURN.

℞ Magnesia calcinatæ ..... ℥ ss.
Bicarbonate sodæ .....
Pulveris zinziberis ..... aa. ʒ j. M.
Sig. A small teaspoonful occasionally.

77. CHALK MIXTURE.

℞ Prepared chalk ..... ℥ jss. to ℥ ij.
White sugar .....
Pulv. gum Arabic ..... aa. q. s.
Peppermint water ..... ℥ vj. M.
Sig. A table spoonful for a dose every two hours. When administered for diarrhœa, astringents and laudanum may be added.

78. CHOLERA MIXTURE.

℞ Chalk mixture ..... ℥ j.
Spirits chloroform ..... xx.
Tinct. opium ..... min. jv. M.
To be taken every four hours.

79. NEUTRALIZING CORDIAL.

℞ Bicarbonate of potash
Pulv. rhei ..... aa. ʒ ij. Mix and add of
Boiling water ..... f. ℥ viij.
Let it stand for two hours, filter and add
Brandy ..... f. ℥ j.
Essence peppermint ..... f. ʒ j.
Add white sugar to an agreeable sweetness.

Highly useful in diarrhœa, dysentery, summer complaint, &c., especially of children.

80. FOR DIARRHŒA AND DYSENTERY.

℞ Oil cinnamon
Oil cloves
Extract ginger ..... aa. ʒ ss.
Morphine ..... grs. ij.
Rhubarb ..... grs. xx.
Aqua ammonia ..... ʒ ij.
Spirits camphor ..... ʒ ij.
Alcohol ..... ℥ viij.
Water ..... ℥ iv. M.
S. Dose, ½ teaspoonful every two hours, in water.

81. SODA MINT FOR NAUSEA, &C.

℞ Sodæ bicarbonas ..... ℥ j.
Aqua Menth. pip ..... ℥ xvj.
Spirits ammon. arom ..... ℥ ss. M.
Dose. 1 table spoonful.

82. FOR FLATULENT DYSPEPSIA.

℞ Salacylate of bismuth ..... 2 parts.
Calcined magnesia ..... 3 parts.
Oil of anise ..... 1 part. M.
Of this powder a small teaspoonful may be taken before a meal.

ANTISEPTICS.

83. LAVENDER AND CAMPHOR.

℞ Spirits of camphor ..... min. xx.
Spirits of lavender ..... f. ʒ j.
Gum trugacanth mucilage ..... f. ʒ vij.
Make a draught. To be taken every six or eight hours by a nervous attendant in a sick room.

84. SOLUTION OF CHLORINATED SODA.

℞ Liquoris chlorinatæ ..... ʒ j.
Tinct. opii ..... min. xv.
Camphoræ aquæ ..... f. ʒ xij. M.

A table spoonful three times a day relieves the fetor, and is otherwise useful in low cases of fever, gangrene of the lungs, &c.

ANTISPASMODICS.

85. AMMONIA MIXTURE.

℞ Aromatic spirits of ammonia ..... fl. ʒ j.
Dilute hydrocyanic acid ..... min. ij.
Syrup ginger ..... min. f. ʒ j.
Caraway water ..... fl. ʒ vîj.

Make a draught. To be taken twice or three times a day if there be flatulence or languor. In dyspepsia, debility, irritable stomach, &c.

86. FOR ASTHMA.

℞ Tinct. lobelia ..... ℥ j.
Ammon. iodide,
Ammon. bromide ..... aa. ʒ ij.
Syrup tolu ..... ℥ iij. M.

Sig. A table spoonful every one, two, three, or four hours.

87. FOR WHOOPING COUGH.

℞ Aluminis ..... ↄ ijss.
Syrup zinzib ..... ℥ j.
Syrup acaciæ ..... ℥ j.
Aqua ..... ℥ j. M.

Sig. One teaspoonful three times a day.

88. FOR ASTHMA.

℞ Ext. Jamaica dogwood ..... fl. ℥ ij.
Syrup ipecac ..... fl. ℥ j.
Syrup aurant. cortex ..... ℥ ss. M.

Sig. A teaspoonful every hour until the paroxysm should cease. Afterwards every four hours for the day.

89. ASIATIC MIXTURE FOR CHOLERA.

℞ Gum opii,
" camph ..... aa. ʒ j.
Ol. caryoph ..... f. ℥ j.
Capsicum (cayenne) ..... ℥ j.
Sp. æth. sulph. Co ..... Oij. Digest 15 days.

Dose for an adult, 20 to 60 drops every 2, 3, or 4 hours.

90. FOR DYSMENORRHŒA.

℞ Tinct. gelsemium,
Tinct. camphor,
Tinct. opii deodorized.....aa. ʒ ij. M.

S. Dose 20 drops every two hours until relieved. Useful in dysentery after the operation of Epsom salts.

91. HOFFMAN'S ANODYNE AND LAUDANUM.

℞ Liquoris anodyne Hoffman's..... ʒ iij.
Tincturæ thebiacæ.....gtt. lxxx.
Aqua cinnamomi..... ℥ vj.

Fiat Mistura. Signa, A teaspoonful every hour in hysteria, &c. May sometimes be taken in a dose of a table spoonful.

92. FOR AFTER PAINS.

℞ Morphia sulphas.....gr. j.
Pulv. camphoræ,
Creta preparata,
Pulv. glycerhiza.....aa. ʒ j. M.

Given in 10 grain doses and repeated, when required, every 4 hours.

ASTRINGENTS.

93. FOR DYSENTERY.

℞ Acidi tanici.....gr. xxx.
Tinct. camphoræ comp.....f. ℥ j.
Aqua cinnamomi.....ad. f. ℥ viij. M.

Label. One sixth part three times a day, about an hour before each meal.

94. CINNAMON MIXTURE.

℞ Tinct. cinnamon..... .....f. ʒ ij.
Cinnamon water.....f. ℥ j. M.

Make a draught to be taken thrice daily. In menorrhagia especially, but also in other varieties of passive hemorrhage.

95. CHLOROFORM, OPIUM, AND CASTOR OIL.

℞ Chloroform..... .....min. x.
Tinct. camph. comp..... .....f. ʒ ij.
Castor oil.....f. ʒ iij.

Make a draught to be taken immediately. In choleraic diarrhœa.

96. FOR HEMORRHAGE OF THE URETHRA, &C.

℞ Tinct. ergot,
Oil of turpentine ..... aa. f. ℥ ij.
Tinct. chloride of iron,
Laudanum ..... aa. f. ℥ j.
Gum Arabic mucilage ..... f. ℥ viij. M.

Sig. Take one table spoonful hourly.

97. IN HEMOPLYSIS (BLEEDING FROM THE LUNGS.)

℞ Fld. ext. ergot,
Paregoric,
Syrup tolu equal parts. M.

S. Half a table spoonful every hour if necessary.

98. FOR PHTHISIS WHEN NIGHT SWEATS AND COUGH ARE BAD.

℞ Acidi sulphurici diluti ..... gtt. x.
Tincturæ opii deodoratæ ..... gtt. x.
Syrupi hypophosphatis ..... f. ℥ j.
Extracti Pruni Virginiani fluidi ..... f. ℥ ij. M.

For a dose ter. die.

It will be more convenient to have the above put up according to the following form :

℞ Elixir vitriol ..... ℥ iij.
Deodorized laudanum ..... ℥ jss.
Syrup hypophosphitis ..... f. ℥ xv.
Fld. ext. wild cherry ..... f. ℥ xxx. M.

Sig. Take nearly a table spoonful three times a day. (For an adult.)

99. FOR INFANTILE DIARRHŒA.

℞ Sub. nitrate bismuth ..... ℥ ij.
Laudanum ..... min. ij.
Gum Arabic mucilage ..... ℥ jv. Mix.

S. A teaspoonful every two hours.

100. FOR CHOLERA MORBUS.

℞ Spirits am. arom ..... ℥ j.
Spirits lav. co ..... ℥ j.
Tinct. opii camph ..... ℥ ss. Mix.

S. A teaspoonful in water every two hours or oftener, until relieved. In cholera morbus, colic, dysentery, &c.

101. FOR CHOLERA INFANTUM.

℞ Bismuthi sub carbonatis. ..... gr. xvj.
Pulv. ipecacuanha comp ..... gr. j.
Pulv. sacchari albi ..... grs. xij. Mix.

For viij powders. One to be taken every three hours in the mother's or cow's milk.

102. FOR CHRONIC DYSENTERY.

℞ Sodæ bicarbonas ..... ℥ ss.
Zinci oxide ..... ℥ ij. M.

Sig. 6 grains every six hours.

103. FOR PROLAPSIS UTERI.

℞ Fld. ext. nux vomica ..... f. ℥ j.
Fld. ext. blue cohash ..... f. ℥ ss.
Fld. ext. ergot ..... ℥ ij.
Simple syrup ..... ℥ ij.
Chloroform ..... min. x. M.

S. One-half a teaspoonful three times a day.

104. ASTRINGENT POWDER.

℞ Sub. nitrate of bismuth ..... grs. xij.
Pulv. geranium root ..... grs. jx.
Dover powder ..... gr. j. M.

Divide into six powders. Give one powder every six hours.

CATHARTICS.

105. THE WHITE MIXTURE FOR RHEUMATISM.

℞ Epsom salts ..... ℥ jss.
Carbonate magnesia ..... ℥ ij.
Peppermint water ..... f. ℥ viij.
Wine of colchicum ..... f. ℥ ij. M.

One-sixth part early every morning.

106. FOR DYSENTERY.

℞ Syrup of rhubarb ..... f. ℥ ij.
Syrup of ginger ..... f. ℥ iij.
Tincture of opium ..... f. ℥ j.
Oil of cloves ..... gtt. xxx. M.

S. One teaspoonful every two or three hours.

107. FOR VOMITING OF PREGNANCY.

℞ Rad. columbo (columbo root),
Rad. ginger (ginger root), ... aa. ℥ ss.
Fol. senna (senna leaves) ..... ℥ j.
Boiling water ..... Oj.

Sig. Wineglassful before meals.

108. COMPOUND LICORICE POWDER.

℞ Powdered senna leaves,
" licorice root ..... aa. ℥ vj.
" fennel seed,
" sulphur ..... aa. ℥ iij.
" sugar ..... ℥ xvj. M.

Dose one teaspoonful as a mild laxative.

109. AS A LAXATIVE FOR ANTIPARTEM ADMINISTRATION.

℞ Senna leaves ..... ℥ iij.
Sulphate of magnesia ..... ℥ xx.
Bruised ginger ..... ℥ x.
Boiling water ..... cong. j.

Let the mixture stand over night; filter. Dose, two or three ounces.

110. FOR PILES.

℞ Magnesia sulp.,
Magnesia carb.,
Sup. tart. potass.,
Sulphur sublim ..... aa. ℥ j. Mix thoroughly.

Sig. One, two, or three teaspoonfuls of the powder before eating in the morning.

111. FOR DYSENTERY.

℞ Mucilaginis tragacanthæ ..... fl ℥ ij.
Aqua cinnamomi ..... fl. ℥ iij.
Olei ricini ..... fl. ℥ xij.
Tinct. rhei,
Syrup aurantii ..... aa. fl. ℥ vj
Tinct. opii ..... min. xxx. Mix.

S. One-eighth part for an adult every three hours. In dysentery where there are scybala in the rectum. Also where an aperient with a sedative is needed.

ANTHELMINTICS.

112. TO EXPEL THE ROUND WORMS.

℞ Santonin.....gr. 3.
Sacchari lactis.....gr. 10.

Make a powder to be taken early in the morning in a table spoonful of milk or cream. Its exhibition should be followed at the end of six hours by mild physic.

113. FOR TAPE WORMS.

℞ Oil of turpentine.....4 drachms.
Gruel (not too thick).....3 ounces. Mix well.

Abstain from supper; take a mixture on waking in the morning, and lie down until it operates.

114. FOR WORMS.

℞ Santonin.....16 grs.
Flu. ext. spigelia.....16 drops.
Simple syrup.....2 ounces. Mix.

Sig. Teaspoonful morning and night.

CAUSTICS AND RUBEFACIENTS.

115. CHROMIC ACID.

℞ Acidi chromici.....grs. 60.
Aqua.....fl. drs. 4. M.

Apply directly to warts, &c., to destroy them.

116. IODINE PAINT.

℞ Iodini.....grs. xl.
Potassai iodidi.....ʒ ss
Spirits vini rectificati.....f. ʒ j. M.

To be applied with a camel's hair brush.

117. BURNT ALUM.

The alumen ustem is made by depriving the alum of its water of chrystalization by heat. It is applied in powder to fungous granulations of ulcers, and mixed with sugar is used to remove nebulous spots on the cornea.

118. FOR PRICKLEY HEAT.

℞ Sulphate of copper.....grs. xx.
Water.....ʒ ij. M.

Apply daily by means of a camel's hair brush or a sponge. It is applied after a morning bath, after the skin has been well rubbed with a towel, and it must be allowed to dry on the skin before dressing.

DIAPHORETICS.

119. A PLEASANT DIAPHORETIC IN FEVERS.

℞ Citratis potasæ preparatæ ..... ℥ ij.
Aqua distilatæ ..... ℥ jv. to ℥ vi.
Olei limonis ..... gtt. ij.
Sacchari alba ..... ℥ j. Misce.

S. A table spoonful to be taken every two hours. Spirits of nitre may be added.

120. INFUSION OF BONESET.

℞ Eupatorii perfoliati ..... ℥ j.
Aqua bulientis ..... Oj.

Infuse for thirty minutes in a covered vessel; then decant and take a wineglassful every hour till there is free perspiration. The infusion must be taken hot as it can be drunk, otherwise it may produce vomiting.

121. DECOCTION OF BARLEY WATER WITH NITRE.

℞ Decocti hardei ..... Oj.
Nitratis potassæ ..... ℥ ij.
Succi limonis ..... ℥ j. to ℥ ij. Fiat potus.

Translation.

Take barley water ..... one pint.
Salt petre ..... two drachms.
Lemon juice ..... one ounce to two ounces.

Make a drink to be drank warm by the patient.

122. MODIFIED DIAPHORETIC.

Errata. On page 172 for (F. 122) read (F. 108.)

℞ Opii pulv ..... ℥ j.
Ipecac pulv ..... ℥ ss.
Camphor pulv ..... ℥ ij.
Saccharum ..... ℥ iv. Mix thoroughly.

This and the following prescriptions in doses of from two to eight grains may be used as a

123. SUBSTITUTE FOR DOVER POWDERS.

℞ Morph. sulph..... ʒ j.
Camphoræ,
Oreta prep.,
Saccharum.....aa. ʒ xx.

124. DIAPHORETIC AND EXPECTORANT.

℞ Potass citrat..... ℥ j.
Suc. limonis.....f. ʒ jss.
Syr. ipecac.. .....f. ʒ ss.
Tr. opii camph.....f. ʒ iij.
Syrupi.....q. s. ad. f. ℥ iij. M.

S. Dessert spoonful every two hours. For colds and coughs.

DIURETICS.

125. NITRE, JUNIPER, AND ETHER.

℞ Potassa nitratis..... grs. 60.
Spiritus juniperi.....f. dr. 1.
Spiritus œtheris nitrici.....f. dr. 3.
Decocti chimaphilæ.....ad. f. oz. 8. Mix.

One-sixth part every six hours.

126. DIURETIC AND LAXATIVE.

℞ Potassæ tartratis..... ʒ iij.
Infus. buchu.....f. ℥ viij. Mix.

S. One-sixth part three times a day.

127. FOR CYSTITS—IRRITABLE CONDITION OF THE BLADDER.

℞ Acidi benzoici,
Sodii biboratis..... .....aa. gr. x.
Inf. buchu..... ℥ ij. M.

Sig. This amount three times a day.

128. INFUSION OF UVA URSI.

℞ Uva ursi foliorum..... ʒ j.
Aqua bulientis..... Oj.

Pour the water boiling hot on the leaves and let them macerate for several hours. To be taken cold, from half a pint to a pint daily. Chiefly used for irritable bladder and strangury.

129. FOR SUBACUTE AND CHRONIC RHEUMATISM.

℞ Potass iod..... ℥ ij.
Vin. calc. rad.....f. ℥ ij.
Tinct. guiac ammon.....f. ℥ iij.
Fld. ext. belladonna.....min. xx.
Aqua cinnamon..... ℥ iij. M.

A teaspoonful in water three times a day.

130. FOR MUSCULAR RHEUMATISM.

℞ Potasii iodide..... ℥ j.
Vini colchici rad..... ..f. ℥ ij.
Morphia sulphatis.....gr. iij.
Syrupi.....f. ℥ j.
Aquæ... .. ..f. ℥ iij. M.

S. A teaspoonful three times a day.

131. FOR DROPSY.

℞ Fld. ext apocynum Canabinum ..... ℥ ij.
Spts. lav. comp..... ℥ ss.
Syrup simplex..... ℥ iij ss. M.

S. A teaspoonful every three or four hours.

132. FOR URETHRAITIS.

℞ Tinct. gelsemii..... ℥ ss
Potassii bromidi..... ℥ ijss.
Potass. bicarb..... ℥ ss.
Aqua..... ..... ℥ iv. M.

S. Dessert spoonful in water three times a day.

EMETICS.

133. POWDER OF IPECAC.

℞ Pulvis ipecacuanha..... ℈ ij. Divide into two doses.

Signa. One to be taken in a little sweetened water or warm water. If one powder does not produce the desired effect within thirty or forty minutes, the second to be taken in like manner. It may be followed by a draught of tepid water after vomiting commences.

134. POWDER OF SULPHATE OF ZINC.

℞ Sulphate of zinc.....10 grs. to ℥ ss.

Signa. To be taken in syrup, and followed by a draught of warm water.

135. EMETIC FOR A CHILD.

℞ Very young children in some instances suffer from indigestion. If delicate give five grains ipecacuanha, and after that sickens the child give a dose of castor oil to remove the offending matter from the stomach.

136. EMETIC USED IN CAPILLARY BRONCHITIS OF CHILDREN.

℞ Zinchi sulphatis.....gr. iij.
Pulveris ipecacuauha..... gr. ij. M.

For one dose; to be repeated every ten minutes until emesis is produced.

EXPECTORANTS.

137. SEDATIVE COUGH MIXTURE.

℞ Vinum ipecacacuanha.....fl dr. 1½.
Spiritus etheris nitrosa.....fl. dr. 6.
Infusi senega.....ad. fl. oz. 8. Mix.

One-sixth part every six hours. In chronic bronchitis when an expectorant and sedative is desired.

138. INFUSION OF FLAXSEED, &C.

℞ Seminum lini..... ʒ j.
Radicis glycerhiza..... ʒ ss.
Aqua bulientis.....Oij.

Macerate for two or three hours near the fire in a covered vessel, strain, and add lemon juice sufficient to make it agreeable. This may be given as a common drink in catarrh.

139. COUGH SYRUP.

Errata. On page 123, for 139, 140, read 81, 107.

℞ Morphine.....grs. viij.
Fld. ext. ipecac.....f. jss.
Tinct. bloodroot.....f. j.
Water..... vj.
Simple syrup.....f. xxv.
Chlorate potash..... ʒ ss.
Muriate of ammonia..... ʒ j. M.

S. Dose for an adult, a teaspoonful three times a day and after each fit of coughing.

140. TAR WATER.

℞ Picis liquida.....Oij.
Aqua.....Cong. j. M.

Stir them together with a wooden rod for ten minutes, then let the tar subside. Strain the water and keep in well corked bottles. A pint may be taken daily.

141. FOR WHOOPING COUGH.

℞ Ammon. bromide..... ℥ j.
Tinct. strammonii, sem.....gtt. xx.
Syrup simplex..... ℥ ij.
Aqua..... ℥ ij, M.

Sig. A teaspoonful three times a day for a child.

142. FOR PNEUMONIA.

℞ Syrup senega..... ℥ ss.
Spirits nitre,
Tinct. digitalis.....aa. f. ℥ ij.
Morphine.....gr. ij.
Simple syrup.....f. ℥ ij, M.

Sig. Dose, a half teaspoonful every three hours or oftener.

143. PNEUMONIA.

℞ Tinct. aconite..... ....gtt. xxx.
Fld. ext. jaborandi,
Spirits nitre dulcis..... .....aa. ℥ ij.
Aqua..... ℥ jv. M.

Sig. A teaspoonful every four hours for an adult.

144. FOR COUGH.

℞ Syrup wild cherry..... ℥ iij.
Tinct. sanguinaria..... ℥ j.
Morphine.....grs. ij.
Chlorate potash.....grs. xv.
Muriate of ammonia.....grs. x.
Aqua..... ℥ j. M.

Sig. Dose, ½ a teaspoonful every six hours, and after each spell of coughing.

ENEMATA AND INJECTIONS.

145. FOR ASCARIDES.

℞ Sulphuric ether.....5 to 20 drops.
Water.....½ pint to a pint. M.

Inject into the bowels.

146. INJECTION FOR ASCARIDES OR PINWORMS.

℞ Acid carbolici ..... ℈j
Potassa chloratis ..... ʒ ij.
Aqua ..... Oj. M.

Warm to 98° and inject into the bowels.

147. INJECTION FOR THE VAGINA. (THIS MAY BE USED DILUTED WITH WATER.)

℞ Tannin ..... ℈j.
Zinci sulphatis ..... ʒ ij
Aqua tepidi ..... Oj. M.

Inject with a Davidson or a fountain syringe.

148. ENEMA FOR PINWORMS.

℞ Argenti nitratis (nitrate silver) cryst... 8 grs.
Aqua distilat ..... 6 oz. for an enema.

Repeat this each day for four or five days. This will stain clothing.

149. ENEMA TO MOVE THE BOWELS.

℞ Ol. ricini (castor oil) ..... f. ℥ ij.
Ol terebinth. (spirits turpentine) ..... f. ʒ i.
Aqua fervent ..... Oij.

To be administered at once.

150. FOR ACARIDES CAUSING VAGINAL DISCHARGE.

℞ Tinct. ferri chloridi ..... ℥ ss.
Aqua calcis ..... Oj. Ft. injectio.

Inject one-half into the rectum at night and the other half the next morning.

151. EMMENAGOGUE ENEMA.

℞ Aloes barbadensis ..... gr. x.
Tepid milk ..... f. ℥ M.

To be injected twice a day when the menstrual flow is due, for one or two days.

152. FOR IRRITABLE UTERUS.

℞ Bromide potash ..... ʒ j.
Water ..... Oj. M.

Use as a rectal injection. Where there is pain in the part, one drachm of the tincture of opium hyoscyamus or conium may be used in the same way.

153. VAGINAL INJECTIONS.

Errata. On page 85 for (F. 153, 199) read (163, 214.)

The vaginal injections most used when disinfection is the special object, and the usual proportions are the following :

℞ Corrosive sublimate, 1 to 1000 or 2000 ; carbolic acid, 5 or 10 to 1000 ; thymal, 1 to 1000 ; sulphite of soda, 5 to 1000 ; permangenate of potash, 5 to 1000 ; liquor sodii chlorinatæ (Labaraques solution), 1 to 2 ; chlorine water, 1 to 2 ; salacylic acid, 1 to 1000 hot water.

For medicinal astringent vaginal injections, give alum, sulphate of zinc, or lead, copper, and iron, salts of the strength of one or two per cent.

The permangenate of potash, silver nitrate, and iron solutions all make almost indelible stains on the linen.

If the injections are corrosive, a large straight glass syringe should be used.

154. INJECTION FOR LEUCORRHŒA.

℞ Alum,
Sulphate of zinc,
Borate of soda,
Pure carbolic acid.....aa. ℥ jss.
Water.....Oij. M.

Of this two table spoonfuls in a pint of water.

155. VAGINAL INJECTION.

℞ Zinci sulphatiz,
Aluminis exsiccata .....aa. ℥ j.
Acidi tannici ..... ℥ ij. Mix. Label.

Half a teaspoonful to be mixed with a pint of tepid or cold water to form an injection.

156. INJECTION FOR DYSENTERY.

℞ Mucilage of gum Arabic or starch..... ℥ ij.
Laudanum.....gtt. xx. M.

For an injection.

157. INJECTION FOR FETID LEUCORRHŒA.

℞ Chlorate of potash..... ℥ j.
Laudanum .....f. ℥ j.
Tar water.....Oij. M.

S. Three table spoonfuls to be added to the pint of warm water as a vaginal injection.

EMMENAGOGUES—UTERINE THERAPEUTICS.

158. STIMULANT EMMENAGOGUE.

℞ Potassa bromide ..... ℥ j.
Tinct. cantharides ..... f. ℥ jss.
Tinct. cinnamomi ..... f. ℥ jv.
Aqua ..... q. s. ad. f. ℥ jss. M.

S. Teaspoonful three times a day for amenorrhœa and hysteria.

159. FOR CHLOROSIS.

℞ Tinct. ferri per chloridi ..... f. ℥ jss.
Potassa chloratis ..... ʒ jss.
Tinct. actea racemosa ..... f. ℥ jv.
Infusi serpentaria ..... ad. f. ℥ M.

Sig. One-eighth part three times a day.

160. RECTAL SUPPOSITARY.

℞ Ext. opii aq. ..... 3 grains.
Ext. belladonna .... 1½ grains.
Buteri cacao ... q. s. 1½ ounces. M. ft. suppos. No. 12.

S. Apply one to relieve pain in the region of the uterus or rectum.

161. FOR PAINFUL MENSTRUATION.

℞ Ferri carbonate pulv ..... ℥ iij.
Ext. conii mac ..... ℥ ijss.
Ol. cinnamom ..... min. xx.
Syrup tolutani ..... ℥ ij.
Syrup simplici,
Aqua ..... aa. ℥ vij. M.

S. Dose, a table spoonful four times a day. To be given for a week or ten days before the menstrual period.

162. FOMENTATION FOR PAIN IN THE BLADDER AND UTERUS.

Errata. On page 90 for (F. 162) read (F. 163.)

℞ Flores chamomelæ ..... 3 ounces
Pulv. semen lini ..... 3 ounces.
Herb hyscyami,
Herb belladoni,
Herb strammonii ..... aa. 1 ounce. M.

Sig. Make fomentations. To be applied topically and covered with oiled silk to retain heat and moisture.

163. VAGINAL SUPPOSITARY.

℞ Zinci oxide vel bismuth carbonatis..... ℥ jss.
Extracti belladonnæ..... ℥ ss.
Olei theobroma..... ʒ j.
Olei olivæ..... ℥ ij. M.

Divide into eight pessaries. Used in chronic leucorrhœa, vaginitis, &c.

NARCOTICS AND SEDATIVES.

164. FOR HEADACHE.

℞ Morphiæ sulphatis..gr. ss.
Sodii bromidi.....gr. xj. M. et fiant. charlutas No. ij.

Sig. Take one powder dissolved in a wineglass of water, to be repeated in an hour if necessary.

165. FOR SUBACUTE RHEUMATISM.

℞ Vinum colchici rad.....f. ʒ j.
Morphia sulph.....gr. v.
Magnesia sulph..... ʒ j.
Potassa iod..... ℥ iv.
Aquæ.....f. ʒ iij. M.

Sig. Half a teaspoonful in water.

166. EPILEPTICAL SEIZURES AT THE MENSTRUAL PERIOD.

℞ Potassa bromide.....grs. xx.
Tinct. belladonna ....min. ij.
Syrup,
Aqua.....q. s. ad. ft. ℥ jv. M.

S. One dose three times a day.

167. OVARIAN NEURALGIA.

℞ Ammon murias..... ℥ ij.
Tinct. aconit..... ʒ j.
Syrup aurant. cort..... ʒ xij. M.

S. One teaspoonful three times a day.

168. SOOTHING NERVINE AND TONIC.

℞ Pot bromide ..... ℥ ss
Ferri pyrophos ..... ℥ j.
Elixir humuli,
Aquæ ..... aa. ℥ jv. M.

Sig. Table spoonful three times a day.

169. FOR HEADACHE.

℞ Ammonia murias ..... ℈ iij.
Morphia acetat ..... gr. j.
Caffeine citrat ..... ℈ ss.
Spts. ammon. aromat ..... ℈ j.
Elixir guarana,
Aqua rosæ ..... aa. ℥ jv. M.

Sig. Dessert spoonful every ten or twenty minutes.

170. TOOTHACHE DROPS.

℞ Chloroform ..... 14 parts.
Mastich ..... 8 parts.
Bals. Peru ..... 5 parts. M. ft. sol.

Sig. Place two or three drops in cavity of tooth.

171. FOR FUNCTIONAL PALPITATION.

℞ Tr. digitalis ..... ℈ v.
Tr. veratrum ..... ℈ ij.
Tr. aconite ..... ℈ j.
Tr. ginger ..... ℈ ijss. M.

S. One teaspoonful three times a day.

172. STIMULANT EMMENAGOGUES.

℞ Ferri phosphatis ..... ℈ ij.
Manganesii phosphatis ..... gr. xxx.
Tincturæ columbæ ..... fl. ℥ j.
Syrupi zinziberas ..... fl. ℥ ij. M.

S. One teaspoonful in a wineglassful of water three times a day.

173. FOR NEURALGIA, &C.

℞ Tincturæ aconiti ..... min. xx.
Spiritus ætheris ..... fl. ℥ jv.
Mistura guaiaci ..... ad. fl. ℥ viij. M.

S. One table spoonful every four hours.

174. FOR NERVOUS DEPRESSION WITH CONSTIPATION.

℞ Spiritus ammoniæ aromatic.....fl. ʒ iv.
Extracti cinchonæ flavæ liquidi.....fl. ʒ jss.
Tinct. rhei.....fl. ʒ jv.
Infusi rhei.....ad. fl. ℥ viij. M.

S. Two table spoonfuls three times daily.

175. ACID MIXTURE.

℞ Acidi sulphurici aromatici.....fl. ʒ ij.
Syrup aurantii.....fl. ℥ j.
Tincturi cinchonæ compositæ.....fl. ʒ vj.
Infusi cinchonæ flavæ.....fl. ℥ viij. M.

S. One table spoonful before each meal in depressing disorders; if there is hemorrhage, give larger doses.

176. FOR LEUCORRHŒA.

℞ Water, one pint; sulphate of magnesia (epsom salts), as much as the water will dissolve; sulphate of iron, one drachm. Mix and add aromatic sulphuric acid, one fluid drachm. Dose, a table spoonful or a sufficient quantity to relax the bowels.

177. FOR ERYSIPELAS.

℞ Spiritus etheris nitrici.....f. ℥ ij.
Tinct. Ferri chloridi.....ʒ ij.
Quinia sulphatis.....grs. xvj. M.

S. A teaspoonful every three hours after the action of a cathartic.

178. AROMATIC INFUSION IN DYSENTERY.

Errata. On page 164 for (F. 178, 179) read (F. 153, 154.)

℞ Bruised calamus root.....℥ iij.
Coriander seed.....ʒ j.
Black pepper.....℥ ss.
Water.....Oj.

Boil to twelve ounces and cool. S. Dose for an adult, an ounce, three times daily; for a child, one to three teaspoonfuls. Sweeten if preferred.

179. INCONTINENCE OF URINE.

℞ Tinct. belladonna.....ʒ ss.
Tinct. ignatia amara.....ʒ ss.
Tinct. cantharides.....ʒ ss.
Tinct. cinchonia comp.....℥ jv. M.

Sig. One teaspoonful in water three times a day.

180. HOP BITTERS.

℞ Tinct. of Hops.....f. ℥ ss.
Tinct. of buchu.....f. ℥ iij.
Tinct. of senega.....f. ℥ iij.
Podophyllin, dissolved in spts. of wine ℥ ss. gr. j.
Tincture of cochinael.....gtt. xx.
Distilled water.....ad. ℥ xvj. M.

This is said to be the same as the nostrum which is sold for one dollar (costing only a few cents.)

181. TONIC IN NEURALGIA.

℞ Cinchonidia.....grs. 5.
Ferri carb.....grs. 10. M.

One to be taken every four hours, and when the pain is severe give a little opium or Dover powder.

182. FOR CHRONIC CHILLS.

℞ Cinchonidæ.....℥ vj.
Acid sulph.....q. s. ad. solv.
Ol. piper niger.....℥ ss.
Ol. limonis.....℥ j.
Alcohol.....q. s. ad. solv. M. E. adde.
Aqua.....q. s. ad. Oj.
Syrup.....Oj. M.

Sig. One table spoonful every four hours.

183. FOR ST. VITUS DANCE. (CHOREA.)

℞ Zinci sulphatis.....gr. xxx.
Ext. valerian (fluid).....℥ j.
Syrup limonis,.....fl. ℥ iij. M.

S. A half teaspoonful three times a day, gradually increasing the dose.

184. TONIC AFTER SEVERE HEMORRHAGE.

℞ Tinct. ferri chloridi,
Tinct. nucis vomicæ.....aa. f. ℥ ij.
Spiritus etheris nitrosi..... f. ℥ iij. Misce fiat mistura.

S. Take a teaspoonful in plenty of water three times a day.

LOTIONS, LINIMENTS, COLLYRIA, OINTMENTS, SALVES, &C.

185. FOR SCIRRHOUS TUMORS.

℞ Ext. eucaliptus.....2 drachms.
Vaseline.....1 ounce.
Acid salacylic.....4 drachms. Ft. Unguent.

Apply to tumor and wear it constantly. Use also for indolent ulcerations where stimulation and purification is needed.

186. TO REMOVE CLOASMA, (BROWNISH DISCOLORATIONS OF SKIN.)

℞ Hydrarg bichlor.....8 gr.
Boracis pulv.....2 drs.
Acidi acetic.....2 oz.
Alcohol.....2 oz.
Aqua.....4 oz. M.

If it roughens the skin too much omit its use and apply sweet cream. Sig. Apply locally to the spots. Poison.

187. SALVE FOR BURNS, &C.

℞ Yellow wax melted and strained..f. ℥ j.
Linseed oil raw.....f. ℥ iij.
Tannin.....℥ j.
Sub nitrate of bismuth:.....℈j. Mix as follows:

Heat the wax in a clean tin vessel, add the oil and stir till they are thoroughly incorporated; then set off the fire and continue to stir until cold, adding first the tannin and then the bismuth.

188. TO CURE SORE EYES.

℞ Sulph. zinc,
Rock salt.....aa. ℥ j.
White sugar.....℥ ij.
Soft water.....℥ xij Mix and use as an eye water.

189. LINIMENT USED IN CEREBRO SPINAL MENINGETIS.

℞ Oil sassafras.....℥ ss.
Chloroform.....℥ ss.
Aqua ammonia.....℥ ss.
Oil cloves.....℥ ij.
Tinct. camphor.....℥ ss.
Alcohol, strong.....℥ jv. M.

S. Apply the whole length of the spine.

190. FOR WHOOPING COUGH.

℞ Rectified oil amber,
Tinct. opium,
Hartshorn,
Olive oil..... .....aa. ℥ ss. M.

S. Rub well the whole length of the spine two or three times a day, until there is tenderness of the skin.

191. AMMONIACAL GAS FOR DYSMENORRHŒA.

℞ Spirits of ammonia..... ℥ j.

Put a teaspoonful of this in a chamber and have the patient sit for one or two minutes over it. In cases of severe tenesmus, or strangury, or dysmenorrhœa, relief may be obtained in about two minutes if the first pungent effects of the gas can be borne.

192. ANODYNE LOTION.

℞ Tinct. aconite.....fl. drs. 12.
Aqua.....ad. fl. oz. 4. Mix.

For acute superficial pain, pruritis, hyperesthesia of the skin, gout, &c.

193. COOLING LOTION FOR INFLAMED EYES.

℞ Pulv. borax.....½ ounce.
Aqua camphor.....1 ounce.
Aqua cherry laurel.....q. s.4 ounces. M.

S. Drop in the eyes ad. lib. A good vehicle for the addition of one or two grains atropia sulphate when indicated.

194. ANAL TROUBLES.

℞ Stramonium ung.....1 ounce.
Extract conium.....½ drachm.
Sodæ salicyl.....10 grains. M.

Sig. Use quite within the anal folds once or twice a day.

195. LOTION FOR PRURITIS ANI.

℞ Soda bibor..... ℥ ij.
Morphia muriat..... .....gr. xvj.
Acid hydrocyan. dil..... ..... ℥ ss.
Glycerine..... ..... ℥ ij.
Aqua ad.....f. ℥ viij. M.

S. For external use.

196. LOTION FOR TINEA CAPITIS. (SCALD HEAD.)

℞ Acid carbolici ..... ℥ ss.
Acid acetici ..... ℥ ijss.
Aqua distilata ..... ʒ ijss. M.

Sig. Apply pro re nata.

197. OINTMENT FOR SKIN AFFECTIONS.

℞ Carbolic acid chrys,
Sulphate soda ..... aa. ʒ j.
Sulphur sublim. ..... ʒ j.
Adipis ..... ʒ j. M.

S. Apply two or three times a day. This is effectual for scald head, and either with or without the sulphur is good for the eruption of poison oak, foul ulcers, &c.

198. FOR SORE NIPPLES.

℞ Aqua rosæ,
Glycerinæ ..... aa. ℥ ij.
Acid tanica ..... ʒ ij. ft. lotion.

Soak lint in the solution and apply to the nipples.

199. TURPENTINE LINIMENT.

℞ Olei terebinthanæ ..... ℥ ij.
Olei olivarum ..... ℥ ij.
Tinct. camphoræ ..... ℥ j.
Aqua ammonia ..... ʒ j. M. Fiat Linamentum.

200. A GOOD LINIMENT.

℞ Oil lavendar ..... ℥ ss.
Alcohol ..... ʒ jv. M. Digest then add.
Sulph. ether ..... ℥ iij.
Laudanum ..... ʒ ij. M. Apply externally.

201. BELLADONNA AND OPIUM.

Errata. On page 88 for (201, 202) read (172, 173.)

℞ Extract belladonna,
Extract opium ..... aa. ʒ j
Laurel water ..... ʒ jv. M.

To be painted over painful or inflamed parts. A sheet of tissue paper may be laid over this, and then a hot fomentation.

202. OINTMENT FOR MAMMARY ABSCESS.

℞ Unguentum tabaci..... ℥ ij.
Pulv. camph..... ℥ ij.
Ext. belladon..... ℥ jss. M. ft. ung.

203. FOR PAIN.

℞ Sweet oil,
Laudanum.....aa. ℥ ij.

Rub on the affected parts.

204. BALSAM FOR WOUNDS.

℞ Balsam fir,
True Venice turpentine,
Oil of almonds.....aa. ℥ ij.

Add carbolic acid ℥ ss., previously dissolved in warm glycerine ℥ ij. Apply with a camel hair brush, having previously cleansed the wound with very warm water.

205. FOR BOILS.

℞ Tr. arnica flowers..... ℥ j.
Tannic acid..... ℥ ss.
Gum Arabic pulv..... ℥ ss. M.

Let the inflamed surface and all around it be painted with the medicine every fifteen minutes. It should be used as soon as prepared.

206. FOR HEMORRHOIDS. (PILES.)

℞ Powdered opium.....grs. xxx.
Tannin..... ℥ j.
Carbolic acid.....gtt. xv.
Oil of tobacco.....gtt. x.
Sol. of sub acetate of lead..gtt. xx.
Vaseline..... ℥ j. Mix intimately.

Apply at night and morning.

207. FOR TENDER NIPPLES.

℞ Sulphate zinc.....gr. j.
Cologne water..... ℥ j. M.

208. Fld. ext. pinus canadenses may be used topically for tender nipples.

209. PILES OINTMENT.

℞ Acidi tannici ..... gr. xx.
Morph. sulphatis ..... gr. v.
Ext. belladonnæ,
Ext. strammonii ..... aa. ℥ ij.
Ungt. petrolei ..... ℥ ij. M.

After bathing and cleansing, rub well on the parts once or twice a day.

210. FOR SORE EYES.

℞ Ferri sulphas exsiccata ..... grs. vj.
Rain water ..... ℥ jv. M.

S. Use as a collyria. (Eye water.)

211. FOR OPTHALMIA.

℞ Sulph. zinc ..... grs. ij.
Sulph. morphia ..... gr. j.
Glycerine ..... ℥ jv.
Rose water ..... ℥ xij. M.

S. For eye water.

212. CHAFINGS.

℞ Finely pulverized native carbonate of zinc .... ℥ j.
" " starch ..... ℥ ij. M.

To be dusted on the parts.

213. FOR ENLARGED TONSILS.

℞ Zinci sulphatis ..... gr. xx.
Syrupi mori ..... fl. ℥ jv.
Glycerina ..... fl. ℥ j.
Infusi krameria ..... ad. fl. ℥ viij. Mix.

S. Use as a gargle.

214. FOR BURNS.

℞ Beeswax melted and strained ..... ℥ j.
Flaxseed oil and sweet oil ..... ℥ ij.
Tannic acid ..... ℥ j.

Mix as in formula 187, and after adding the tannin, add 6 or 8 drops of carbolic acid to the ounce.

215. ASTRINGENT COLLYRIA.

℞ Zinci sulphatis.....gr. jv.
Aluminis exsiccata.....gr. jv.
Tinct. arnica .....min. x.
Aqua distilata.....f. ℥ j. M.

216. FOR TETTER AND RINGWORM.

℞ Borax..... ℥ ss.
Tar water..... ℥ ij. M.

217. FOR PRURITIS OF VULVA.

℞ Borax ..... ℥ ij.
Morphine.....grs. jv.
Tar water..... f. ℥ vij. M.

Sig. Apply three times a day to the affected parts by means of a sponge, &c. First wash with warm water and soap, and dry before applying the lotion.

218. DANDRUFF LOTION.

℞ Tinct. of cantharides.... ..... ℥ ij.
Glycerine..... ℥ ij.
Rose water..... ℥ iij. M.

219. SULPHATE OF IRON IN ERYSIPELAS.

℞ Ferri sulphas pulverized..... ℥ j.
Aqua..... .....Oss.

Apply to affected cuticle with a cotton cloth well wetted in the solution every thirty minutes till the inflamed part is restored.

220. PRURIGO VULVA.

℞ Soda bicarb..... ℥ ss.
Morph sulph.....gr. vj.
Rose water..... ℥ viij. M

S. Apply locally.

221. MAMMARY SWELLINGS.

℞ Gum camphor..... ℥ j.
Sulph. ether,
Tinct. opii..... .....aa. ℥ ij.
Aqua..... Oj.

Dissolve the camphor in the ether, then add the opium and the water. Wet linen or cotton cloths and keep applied to the breasts.

222. FOR A BLACKENED EYE.

℞ Muriate of ammonia..... ʒ ij.
Water,
Vinegar.....aa. ℥ ij.

First foment the part with hot water if there is much pain, then keep the contusion wet with the lotion.

223. CHLORAL LINIMENT.

℞ Chloral hydrat..... ʒ j.
Liniment saponis.....f. ℥ jv. M.

Sig. For external use. Do not apply so as to cause much soreness.

224. BARBER'S ITCH.

℞ Hydrarg. ammoniat.....10 grains.
Bismuth. subnit..... 1 drachm.
Liq. carbonis deterg..... 1 drachm.
Lanolin..... 6 drachms. M.

Sig. To be applied night and morning.

225. COMEDONES.

℞ Sulphuric ether..... 8 drachms.
Ammonia carbonate..... 1 drachm.
Boracic acid.....20 grains.
Water, to make.....16 drachms. M.

Sig. Apply twice a day.

226. OINTMENT FOR FRECKLES.

℞ Subnitrate of Bismuth.....2 drachms.
Simple ointment..... .....2 ounces.

Apply to the skin at night and remove in the morning with a little cold cream previous to washing.

227. CHILBLAINS.

℞ Acidi carbolici.....1 drachm.
Tinct. iodini.....2 drachms.
Acidi Tannici.....1 drachm.
Cerat simp.....4 ounces. Misce bene ut ft. ungt.

Sig. Apply two or three times a day.

Errata. On page 166 for (F. 234) read (F. 201.)

GLOSSARY.

ABDOMEN. The belly ; the portion of trunk between the diaphragm and pelvis.
ABNORMAL. Unnatural ; out of the usual rule or order.
ABORTION. Premature expulsion of the fœtus.
ABRASION. A breaking or rubbing off.
ABSCESS. A collection of pus or matter.
ACAPUNCTURE. To insert needles into the skin or flesh.
ACCOUCHEUR. A skillful man midwife.
ACETATED. Combined with acetic acid.
ACETABULUM. The cotyloid cavity that receives the head of the thigh bone.
ACID. A substance that can combine chemically with alkalies and alkaline oxides.
ACINI. Small granular masses.
ACTUAL CAUTERY. Cauterization by red hot iron.
ACUTE, SHARP. An acute disease, has rapid progress and short duration.
ADHESION. A sticking or growing together.
ADIPOSE. Fatty.
ADJUVANTS. Medicines which assist the action of other medicines.
ÆTIOLOGY. The science of causes.
ALA. A wing.
ALA NASI. The cartilaginous sides of the nose which move during difficult breathing.
ALBUMANOID. Resembling albumen.
ALBUMINARIA. The presence of albumen in the urine. A kidney disease.
ALKALIES. Substances that have the power of forming salts with acids.
ALIMENTARY CANAL. The passage from the mouth to the anus.
ALTERATIVE. A medicine that has power to gradually change or improve a disease.
ALVEOLI. The bony sockets of the teeth.
AMENORRHŒA. A suspension or absence of the menses.
ANAEMIA. A lack of red particles in the blood ; bloodlessness.
ANAL. Relating to the anus or rectum.
ANASARCA. Dropsy of the celular tissue.

ANESTHETIC. Capable of producing insensibility.
ANGINA. An inflammation of the throat.
ANTACID. A remedy against acidity.
ANTERIOR. In front, or placed before.
ANTHELMINTIC. A remedy against worms, destroying or expelling them.
ANTIFLEXION. Bending forwards.
ANTILITHICS. Substances that prevent the formation of calculi.
ANTIPHLOGISTICS. Such medicines as reduce an inflammatory habit.
ANTISEPTIC. Preventing or resisting putrefaction.
ANTISPASMODICS. Such medicines as reduce spasms.
ANTIVERSION. Turning forwards.
ANUS. The opening at the inferior extremity of the rectum.
AORTA. The great artery of the body, going from the heart.
APERIENT, Opening. Mildly purgative.
APHONIA. Loss of voice.
APTHÆ. Small white ulcers of the mucous membrane.
APOPHYSIS. A bony process ; a prominence on the bone.
AQUA. Water.
AREOLA. A circle around the nipple.
AREOLAR TISSUE. The tissue that connects various compound parts of the body.
ARTICULATION. The joining or union of bones.
ARTERY. A vessel carrying blood from the heart.
ASCARIDES. Pin worms.
ASCITES. Abdominal dropsy.
ASPHYXIA. Apparent death ; suspended animation.
ASSIMULATION. The process by which nutriment is converted into the substance of the body.
ASTHENIA. Want of strength ; exhaustion ; debility.
ASTRINGENT. Having the power of contracting organic textures.
ATROPHY. Wasting.
AUSCULTATION. Listening, observing the sounds in the thorax, &c.
AUTOPSY. A post mortem examination.
AXILLA. The arm pit.
AXIS. A line passing through the center of a body.
BACTERIA. A kind of microscopic organism.
BALLOTTEMENT The falling back of the displaced fœtus.
BASIS. That part upon which anything rests.
BENIGN. Of a mild character.
BILE. The secretion of the liver ; the gall.
BIOLOGY. The science of life in general.
BISTOURY A small narrow bladed knife used in surgery.
BLASTODERM. The membrane enclosing the yolk of the ovum.
BOUGIES. An instrument for dilating mucous canals.
BRONCHI. The branches from the windpipe leading to the lungs.

BULIENTIS. Boiling.
BULEMIA. Abnormal appetite.
CACHEXIA. A generally depraved condition of the system ; a constitutional tendency
CÆSAREAN SECTION. The operation of removing a fœtus from the womb through the abdomen.
CALCULUS. A stone in the bladder or some part of the body.
CANULA. A small tubular instrument.
CAPILLARIES The smallest division of blood vessels.
CAPILARY. Hairlike ; small.
CAPSICUM. The red pepper.
CAPSULE. A membranous sac ; a gelatinous envelope in which medicine is taken.
CARBONIC. Pertaining to carbon or charcoal.
CARCINOMA. A cancer.
CARDIAC. Pertaining to the heart.
CARDIAC ORIFICE. The upper or left orifice of the stomach.
CARIES. Ulceration of the bone or teeth.
CARMINATIVE. A medicine which tends to expel flatus.
CARTILAGE. Gristle, a substance softer than bone.
CATAMENIA. Menstrual discharges.
CATAPLASM. A poultice.
CATARRH. A discharge of secretion from a mucous membrane.
CATHARTICS. Medicines causing discharges from the bowels.
CATHETER. A tubular instrument for introduction into the urethra.
CAUSTIC. An escharatic ; a burning application.
CELULAR STRUCTURE. A tissue composed of minute cells.
CELULITIS Inflammation of celular or connective tissue.
CEPHALALGIA. Pain in the head.
CEREBELLUM. The lesser brain ; the posterior portion of brain.
CEREBRAL. Relating to the brain.
CERVIX. The neck.
CHALYBEATES. A liquor or medicine containing iron.
CHARTA. A paper or powder.
CHEST. The body from the neck to the abdomen.
CHIRURGERY. Surgery.
CHOLAGOGUE. Medicine increasing the flow of bile.
CHLOASMA. Liver spots ; brownish discolorations of the skin.
CHOLÆMIA. Bile existing in the blood.
CHOLESTERINE. A fatty substance.
CHOREA. St. Vitus dance ; a disease.
CHORIAN. An envelope of the ovum.
CHRONIC. Of long duration.
CHYLE. A milky fluid made from chyme.
CHYME. The pulp into which food is changed in the stomach.
CICATRIX. A scar remaining after a wound is healed.
CILIA. Hairlike appendages.

CLINICAL. At the bedside ; pertaining to a bed.
CLITORIS. A little erectile tubercle at the front part of the vulva.
Erratum. On page 66 sixth line from the bottom, for g. vagina, read g. clitoris.
CLONIC. Contracting and relaxing.
CLYSTER. An enema ; an injection into the bowels.
COAGULUM. A clot.
COAPTATION. Fitting together properly.
COCCYX, Oscoccygis ; a small bone at the lower end of the sacrum.
COLLAPSE A sudden failing of the vital powers.
COLLIQUATIVE. Causing rapid exhaustion.
COLLYRIUM. An eye water.
COLOSTRUM. The first milk secreted after delivery.
COLON. A portion of the large intestines.
COMA. A profound sleep ; lethargy.
COMMISSURE. A point of union between two parts.
COMPOUND FRACTURE. One which communicates with the surface ; a fracture where the bone has protruded through the skin.
CONDYLE. A protuberance on a bone.
CONFLUENT. Blending ; running together.
CONGENITAL. Dating from birth.
CONGESTION. An unnatural fullness or accumulation of blood.
CONJUNCTIVA. The membrane covering the eyeball and lining the lid.
CONTAGION. The transmitting of disease by contact.
CONTINUITY. An uninterrupted connection.
CONTRA INDICATION. An indication against certain treatment.
CONTUSION. Bruise.
CONVALESCENCE. A period of regaining of health.
CONVULSIONS. Involuntary contractions of muscular parts.
COPULATION. Joining together ; coition.
COMEDONES. Black spots on the face.
CORONAL. Belonging to the crown or top of the head.
CORTEX. The peel ; bark.
CORNEA. The transparent membrane of the front part of the eye.
CORYZA. An acute catarrh ; the snuffles.
COUNTER IRRITATION. Irritation excited in one part of the body to relieve another part.
CRANIUM. The skull ; the brainpan.
CRASSAMENTUM. Clot ; the thick part of the blood.
CREPITUS. Creaking or grating sound.
CRETA. Chalk.
CRISIS. The turning point or change of a disease.
CUMULATIVE. Increasing by successive additions ; augmenting.
CUTANEOUS. Belonging to the skin.
CUTICLE. The scarf skin ; epidermis.
CYANOZED. Made blue ; blue jaundice.
CYSTITIS. Inflammation of the bladder.

CYSTOCELE. Descent of the bladder.
DECIDUA. Afterbirth membranes.
DECOCTION. To prepare by boiling; the results of such boiling.
DECOMPOSITION. Separation of a body into its component parts.
DEMULCENT. Of a bland, mucilaginous nature.
DENTITION. Teething.
DEODORANT. Destroying odors.
DEPURATING. Cleansing from impurities.
DENS. A tooth.
DESQUAMMATION. A scaling of the cuticle.
DETERMINATION. Unusual flow to any part.
DEXTER. The right.
DIA. In a day.
DIAGNOSIS. Determining or distinguishing one disease from another.
DIAPHORETIC. A medicine which excites perspiration; sweating.
DIASTOLE. The dilatation of the heart on entrance of the blood.
DIATHESIS. A peculiar bodily constitution or predisposition.
DIETETICS The branch of medical art that relates to food.
DIGESTION. Conversion of food into chyme and chyle
DIGITAL EXAMINATION. Examination by the finger, or by touch.
DILATATION. Dilation; expansion; enlarging.
DILUENTS. Medicines or fluids that increase the fluidity of the blood.
DISINFECTANTS. Substances that destroy septic germs.
DISLOCATION. Displacement; out of joint.
DISTAL. Farthest from the heart.
DIURESIS. An unusual secretion of urine.
DIURETICS. Medicines that produce an increased flow of urine.
DORSAL. Pertaining to the back.
DOUCHE. A column or current of water.
DUCT. A tube or canal which conducts a fluid.
DUODENUM. The part of the intestines next the stomach.
DYSPNŒA. A difficulty of breathing.
DYSURIA. Difficult, painful, and burning urination.
ECCHYMOSIS. An effusion of blood into the celular structures.
ECCLAMPSIA. Puerperal convulsions.
ECZEMA. An eruption of minute vesicles upon the skin.
EDEMA. Swelling from inflammation of the celular structure.
EFFERVESCE. To foam from the escape of gas.
EFFLUVIA. Exhalation from putrescent matter.
EFFUSION. The escape of a fluid from out of its natural vessels.
ELECTUARY. A medicinal confection.
EMBOLUS. A clot or some plug obstructing a blood vessel.
EMBRYO. The fœtus in its early stage of developement.
EMMENAGOGUE. Promoting the menstrual discharge.
EMMOLIENTS. Substances that soften the animal fibre.

EMPHYSEMA. Air escaped into the celular tissue.
EMULSION. A mixture of oil and water with some other substance.
ENDERMIC. Through the skin.
ENEMA. An injection thrown into the rectum.
ENTERIC FEVER. Typhoid fever ; intestinal fever.
EPIDEMIC. Prevalent among the people.
EPIDERMIS. The scarf skin ; outer layer of the skin.
EPIGLOTTIS. The cartilage that shuts over the windpipe in swallowing.
EPIGASTRIUM. The region of the stomach.
EPILEPSY. Falling sickness.
EPIPHYSIS. A union of bone by cartilage.
EPITHELIUM. A layer of minute cells covering a membrane superficially.
EPISPASTICS. Substances which cause a blister.
ERRHINES. Substances which cause sneezing.
ERUCTATION. Raising or belching gas from the stomach.
ERYTHEMA. A skin disease with rose colored patches.
ESCHAR. The dead part, killed by caustic or mortification.
ESCHAROTIC. A substance that burns or destroys animal tissue.
ETHERIZATION. The state of the system under the influence of ether.
EXANTHEMATA. The eruptive or breaking out fevers.
EXCORIATION A wearing off or abrasion of the skin.
EXFOLIATE. The act of throwing off of dead bone in scales.
EXPECTANT. Waiting for the efforts of nature.
EXTEND. To stretch ; to pull out.
EXTRAVISATION. The effusion of the contents of vessels into the surrounding tissues.
EXTRA UTERINE. Outside the uterine walls.
FÆCES. Excrement ; evacuations from the bowels.
FALLOPIAN TUBES. Two ducts or tubes floating in the abdomen.
FASCIA. Fibrous membrane covering muscles.
FEBRIFUGE. Sedative ; assuaging fever.
FEMUR. The thigh bone.
FIBRE. An organic filament or thread.
FILAMENT. A thread-like appendage.
FISSURE. A deep, narrow depression.
FLATULENCE. Afflicted with gas in the alimentary canal.
FLEXION. The act of bending.
FLUCTUATION. The undulation of fluid when pressed.
FŒTUS. The young viviperous animal in the womb.
FOLLICLE. A small secreting sac.
FOMENTATIONS. The application of hot cloths wet with hot water or medicated liquors.
FOREARM. The part of the upper extremity between the elbow and hand.

FORMICATION. A sensation like that of the creeping of ants.
FORMULA. Prescriptions; given forms.
FOSSA. A depression in a bone.
FRENUM. A bridle; a binding or restraining membrane.
FUNDUS. The larger part of a cone shaped organ.
FUNIS. The umbilical cord; the naval string
FURUNCLE A boil.
GALL-STONES. Concretions formed from the bile.
GANGLION. An enlargement in the course of a nerve.
GANGRENE. Partial death; mortification.
GARGLES. Solutions applied to the throat.
GASTRIC. Pertaining to the stomach.
GENITAL. Pertaining to generation.
GERM. An undeveloped point of growth.
GESTATION. The period of pregnancy.
GINGLYMOID. Hinge-like.
GLOBUS. A globe or ball.
GLOBUS HYSTERIOUS. A sensation in the throat said to be like a ball.
GLOTTIS The opening into the windpipe.
GRAMME. The French unit of weight; a little over fifteen grains.
GRANULATIONS. Small red elevations looking like grains.
GUTTA. A drop.
GYNECOLOGY. The science of the diseases of women.
HEARTBURN. A hot sensation in the throat or stomach.
HEMATEMESIS. Vomiting of blood.
HEMOPTYSIS. Raising blood from the lungs.
HEMORRHAGE. A flow of blood.
HEMOSTATIC. An agent to stop bleeding.
HEMATOSIS. Sanguification; furnishing blood.
HEMICRANIA. Pain in one side of the head.
HEMEPHLEGIA. Paralysis of a lateral half of the body.
HEPATIC. Pertaining to the liver.
HERNIA. A protrusion of a part that has escaped from its natural cavity.
HOMOGENEOUS. Consisting of similar elements or parts.
HYDROCYANIC ACID. Prussic acid.
HYDATIDS. A mass of watery vesicles.
HYDRARGYRUM. Mercury.
HYDROCEPHALUS. Dropsy of the brain.
HYDROPS. Dropsy.
HYGIENE. Science which treats of the preservation of the health.
HYMEN. The virginal membrane at the orifice of the vagina.
HYPERÆMIA. An excess of blood in an organ.
HYPERESTHESIA. Exalted sensibility.
HYPERTROPHY. Augmented bulk; enlargement.
HYPNOTIC. Sleep producing; soporific.

HYPOCHORIDRIUM. The region under the floating ribs.
HYPOGASTRIUM. The lower part of the abdomen, near the pubis.
ICHOR. Thin, watery, and acrid discharge.
ICTERUS. Jaundice.
IDIOPATHIC. Primarily affecting; not secondary or symptomatic.
IDIOSYNCRACY. Peculiarity of constitution or susceptibility.
ILIUM. The upper part of the hip or haunch bone.
ILLEUM. The lower two-fifths of the small intestines.
IMPACTED. Wedged in or driven close.
IMPERFORATE. Having no opening.
INANITION. Exhaustion from want of food.
INCOMPATIBLE. Cannot be properly employed together.
INCONTINENCE. Inability to hold.
INCISOR. A fore or front tooth.
INCUBATION. Hatching; the maturing of contagious virus.
INDEX FINGER. The fore finger.
INDURATION. The act of hardening.
INFECTION. The communication of virus.
INFERIOR. The lower of two parts.
INFUSION. 1st. The steeping of a substance in a fluid; 2d. The liquor resulting from the steeping of a substance in a fluid.
INGUINAL. Pertaining to the groin.
INHALATIONS. Gas or vapor to be inspired into the lungs.
INNOMINATA. Nameless.
INSPIRATION. Breathing in; inhalation.
INTERCOSTAL. Between the ribs.
INTEGUMENT. The skin; that which covers the muscles.
INUNCTION. Annointing; rubbing in an ointment.
INVOLUTION. The reducing of a part to its natural condition.
IRRITATION. Increase of vital movement and sensibility.
ISCHIUM. The inferior part of the os innominatum.
LABIAL. Relating or belonging to the lips.
LABIA MAJORA. Two cutaneous folds that bound the opening of the vulva externally.
LACERATION. A tearing; a breach made by rending or tearing.
LACTATION. Suckling; the period of giving suck.
LACTEALS. The chyliferous vessels; conveying chyle.
LAMINA. Layers.
LAPEROTOMY. Opening the bowels by an incision.
LARYNX. The top of the windpipe; the cavity which contains the vocal ligaments.
LATENT. Concealed; not apparent.
LATERAL. Towards the side.
LAXATIVES. Medicines which render the bowels more relaxed than usual.
LEECH. A cotyloid worm used for the local abstraction of blood.
LESION. A morbid change in the texture of an organ.

LEUCORRHŒA. A whitish discharge from the vagina ; the whites.
LIGAMENT. A fibrous band.
LIGATE. To tie ; to secure with a string or band.
LIGATURE. A cord or string.
LIQUOR AMII. The fluid in which the fœtus is developed.
LITER A French measure ; 2.113 pints.
LITMUS A vegetable dye ; it is turned red with acids.
LOBE. A division, or projection of an organ.
LOCHIA. Evacuations from the vagina following childbirth.
LOINS. The lateral parts of the lumbar region.
LUMBAR. Pertaining to the reins or loins.
LUXATION. Dislocation, or putting out of joint.
LYMPH. The colorless fluid contained in lymphatics, &c.
LYMPHATICS. Lymph ducts ; certain vein-like vessels.
MACERATION. The act of softening or soaking a thing.
MALARIA. Noxious air from decomposed matter.
MAMMARY. Pertaining to the breasts.
MANIPULATION Handling skilfully.
MARASMUS. A wasting of flesh ; a tuberculous disease of the mesenteric glands.
MASSAGE. Kneading and softening of the muscles, &c
MEATUS. A passage larger than a duct ; a channel.
MECONIUM. The first fœces of an infant.
MEDIAN LINE. An ideal line dividing the body longitudinally.
MEDULLA OBLONGATA. The upper or cranial portion of the spinal cord.
MENINGITIS. Inflammation of the meninges or membranes of the brain.
MENORRHAGIA. Profuse menstruation.
MESENTERY. A portion of the peritoneum attached to the small intestines.
METASTASIS. A sudden removing of disease from one part to another.
METRITIS. Inflammation of the womb.
MIASM. Infection floating in the air.
MICTURATION. The act of urînating, or evacuating the bladder.
MINIM. The smallest liquid measure ; a drop.
MONAD. The simplest kind of minute animalculæ.
MUCUS. A viscid fluid secreted by a mucous membrane.
MULTIPARA. A woman who has had two children or more.
NÆVUS. A birth mark.
NARCOTIC. Producing sleep and stupor.
NARES. The passage through the nose ; the nostril.
NATES. The seat ; the buttocks.
NECROSIS. Death of the bone.
NEURALGIA. Painful affection of the nerves.
NEURILEMMA. The sheath investing a nerve.

NORMAL. Regular; natural; as it ought to be.
NYMPHÆ. The labia interna; two lateral folds of mucous membrane within the labia externa.
OBSTETRICS. Midwifery.
OBTURATOR FORAMEN. An opening between the pubic and ischiatic arches closed by a membranous ligament.
OCCIPUT. The hinder part of the skull or head.
ODONTALGIA. Toothache.
ŒDEMA. Swelling from the presence of serum in the areolar tissue.
ŒSOPHAGUS. The gullet.
OFFICINAL. Authorized by the Pharmacopœia.
OMENTUM. The caul; a peritoneal fold covering the bowels.
ONYCHIA. A small abscess at the side of the finger nail.
OPTHALMIA. Inflammation of eyes.
OPTHALMIA NEOTORUM. Inflammation of the eyes of new born children.
OPTIC. Relating to the vision.
ORBIT. The bony cavity containing the eye.
ORTHOPNŒA. Difficulty of breathing, especially on lying down.
OS. 1st mouth, 2d bone.
OSMOSIS. The passage of a fluid through a porous membrane.
OS SACRUM. The posterior bone of the pelvis.
OSSIFICATION. Conversion into bone.
OS UTERI. The mouth of the uterus; the os tincæ.
OVIDUCT. A duct in the Fallopian tube.
OVULATION. The formation and discharge of eggs or ovules.
OVUM. An egg; an embryo and its membranes.
OXYTOCIC. Having power to increase uterine pains.
OZÆNA. Fetid ulcer in the nose.
PALMAR. Pertaining to the interior of the hand.
PALPATION. Exploring diseased parts by touching and pressure.
PAPILLA. Minute nipple shaped elevations in the skin and mucous membrane.
PARAPLEGIA. Paralysis of the lower half of the body.
PARENCHYMA. The mass or principal part of organs like the lungs or liver.
PARIETAL. Relating to the walls.
PAROXYSM. An exacerbation of severity, in a disorder.
PARTURITION. Delivery; the act of bringing forth.
PATHOLOGY. The science which treats of the nature of disease.
PECTORAL. Pertaining to the chest or breast.
PEDILUVIUM A foot bath.
PELVIS The bony structure of the lower extremity of the body.
PERCUSSION. The act of striking on a body to elicit sounds.
PERINNEUM. The space between the tuberosities of the ischium, the anus, and the genitals.
PERISTALTIC Vermicular or wormlike.

PERITONEUM. A serous membrane lining the abdominal cavity.
PERTUSSIS. Whooping cough.
PESSARY. An instrument to support the uterus when introduced into the vagina.
PETECHIA. Spots which appear on the skin in malignent fever.
PHARMACOPŒIA. A treatise describing the preparation of all kinds of medicine.
PHARYNX. The upper part of the œsophagas.
PHTHISIS. Consumption.
PHYSIOLOGY. The science of the properties and functions of living beings.
PLACENTA. The after birth.
PLASMA. The colorless fluid of the blood.
PLETHORA. Overfullness of blood ; repletion.
PLEURA. The serous membrane covering the lungs
PLEURITIS. Pleurisy.
PNEUMOGASTRIC. Belonging to the lungs and stomach ; the eighth pair of nerves.
POST MORTEM. After death.
PRESENTATION. The part that presents.
PRIMAPARA. A woman who bears her first child.
PROCESS. A projecting part of bones.
PROGNOSIS. A prediction as to the course and event of a disease.
PROLAPSE. A falling down or falling out of a part.
PROPHYLACTIC. A preventive.
PROXIMAL. Nearest the heart.
PRURITIS. Itching.
PUERPERAL. Pertaining to childbirth.
PUBIS. The anterior part of the bony pelvis.
PULMONARY. Pertaining to the lungs.
PURGATIVE. Cathartic.
PURULENT. Having the character of pus or matter.
PUS. The creamy liquid produced by suppuration.
PUSTULE. Elevations of the skin containing pus.
PYREXIA. Fever ; the febrile condition.
PYROSIS. Water brash.
QUARANTINE. Inhibition of intercourse ; isolation.
QUARTAN. Recurring every fourth day.
QUICKENING. The first motion of the fœtus felt by the mother.
RALES. Sounds produced in the lungs when there is mucus in the air passages.
RAMUS. A branch.
RECTUM. The terminal part of the large intestines.
REDUCTION. The restoring of displaced parts.
REFRIGERANT. Cooling medicines which lessen the heat of the body.
REGIMEN. The systematic use of the necessaries of life.

REMISSION. Temporary abatement of symptoms.
RENAL. Pertaining to the kidneys.
RESECTION. Taking out a portion of bone.
RESOLUTION. Gradual subsidence of a disease.
RETROFLEXION. Being bent over backwards.
RETROVERSION. Turning or falling backwards.
REVULSIVES. Appliances which remove a disease by causing a determination to some other part.
RHYTHM. Measured beat or movement.
RICKETS. A disease of the bones.
RIGOR A slight tremor and chilliness.
RIGOR MORTIS. Stiffening of the body after death.
RUBEFACIENT. Making red and warm.
RUPTURE. A protrusion of any of the contents of the belly through the parieties.
SACCHARUM. Sugar.
SACRUM. The os sacrum or os basilaire.
SAGITTAL. The name of a suture that unites the paretal bones.
SALT. A compound of an acid and a base combined chemically.
SANATIVE. Curative; sanitary.
SANGUINEOUS. Full of blood.
SANIES. A thin fluid discharged from an ulcer, having some of the properties of pus and blood.
SARCOMA. A tumor of a fleshy consistence.
SORDES. An accumulation of foul secretions upon the teeth.
SATURATION. The union of one substance with another till no more can be received.
SCARIFICATIONS. Making small incisions.
SCIATIC. Pertaining to the hip.
SCIRRHUS. A hard, knotty, cancerous tumor.
SCYBALA. Hard lumps of feces.
SECRETION. The vital action by which substances are separated from the blood.
SECUNDINES. The placenta and membranes; the afterbirth.
SEDATIVES. Medicines which diminish the action of the heart and nerves, and which are quieting.
SEPTIC. Having power to promote putrefaction.
SEPTICEMIA. Blood poisoning by putrid infection.
SEQUELÆ. Morbid phenomena supervening after disease.
SEROUS. Watery.
SERUM. Watery animal fluids.
SHOCK. Sudden depression of the vital powers.
SIALAGOGUE. A medicine producing an increased flow of saliva.
SINAPISM. A mustard draught.
SINGULTUS. Continued hiccough.
SINUS. An elongated cavity or abscess, having a small orifice.
SITU. Situation.

SLOUGH. A dead or mortified portion.
SOLUTION. The preparation made by dissolving a solid in a liquid.
SPECULUM. An instrument for dilating a passage or facilitating an examination.
SPHINCTER. A circular muscle for contracting a natural opening.
SPINAL CORD. A continuation of the brain through the vertebral column.
SPORADIC. Occurring singly or scattered.
STERCORACEOUS. Mixed with fœcal matter.
STERNUTATORY. Causing sneezing.
STETHOSCOPE. An instrument for conveying sound from the body to the ear.
STRABISMUS. Squinting; an affection causing what is called crosseye.
STRANGURY. A painful discharge of urine.
STRICTURE. Contraction of a portion of a duct or tube.
STUPE. A fomentation by means of hot cloths.
STYPTIC. Strongly astringent.
SUBCUTANEOUS. Beneath the skin.
SUBJECTIVE. Pertaining to one's own consciousness.
SUBSULTUS. Twitching of the muscles.
SUDAMINA. Small vesicles caused by profuse sweating.
SUDORIFEROUS. Sweating.
SUDORIFICS. Medicines which produce a flow of perspiration.
SUPERIOR. The upper of two parts.
SUPPOSITARY. Medicine in a solid form, intended for introduction into the rectum, or vagina.
SUPPRESSION. Stoppage of a discharge.
SUPPURATION. The process of forming pus.
SUTURES. 1st. The seams that unite the bones of the skull. 2d. Stitches to hold the edges of a wound together.
SYMPHASIS. A peculiar kind of articulation.
SYMPTOMS. Signs or phenomena which accompany disease.
SYNCHONDROSIS. Union by cartilage or gristle.
SYNCOPE. A fainting or swooning
SYSTEMIC. Pertaining to the system or body generally.
SYSTOLE. The contraction of the heart.
TÆNIA. A kind of long intestinal worm; a tape worm.
TAMPON. A plug designed to arrest hemorrhage.
TAXIS. Pressure made by the fingers to return a hernial tumour.
TENDON. A cord or bundle of fibres attaching muscle to bone.
TENESMUS. A straining at stool; a painful sensation in the lower part of the rectum.
TENT. A cylinder designed for dilating a part.
TERTIAN Occurring every third day, or every forty-eight hours.
TETANUS. A disease characterized by continuous muscular contractions; a lockjaw.

THERAPEUTICS. The application of remedies for diseases.
THORAX. The cavity containing the lungs and heart; the chest.
THROMBOSIS. The obstruction of a blood vessel by a small coagulum.
TINCTURE. Spirit containing medical substances in solution.
TONE. A proper state of firmness.
TONIC. A strengthening medicine.
TOPICAL. Local; applied to a particular part.
TORMINA. Twisting, griping pains in the bowels.
TOURNIQUET. An instrument for ligating a limb and making pressure on an artery.
TRANSUDATION. Passing of a fluid through the pores or interstices.
TRAUMATIC. Resulting from a wound or lesion.
TRISMUS. Lockjaw; tetanus.
TRITURATION. The act of reducing to a fine powder.
TUBER ISCHII. The tuberosities of the ischrum.
TUMEFACTION. Enlargement; swelling.
TYMPANITIS. Flatulent distention of the belly.
TYPE. Peculiar form of disease.
ULCER. A sore, discharging pus.
UMBILICUS. The naval.
UNCTUOUS. Fat; oily.
UREA. A nitrogenous constituent of the urine.
URETHRA. The canal that conveys the urine from the bladder out of the body.
URINOMETER. An instrument for obtaining the specific gravity of urine.
UTERO GESTATION. Pregnancy.
UTERUS. The womb.
VARICOSE VEINS. Veins that are morbidly enlarged.
VASCULAR. Full of blood vessels.
VEIN. A vessel carrying blood to the heart.
VENA CAVA. A name given to two great veins of the body.
VERTEBRA. A joint of the spinal column, or back bone.
VERTIGO. Dizziness.
VESICANTS. Blistering agents
VESICLE An elevation of the cuticle containing serum; a bladder.
VESSEL. A tube or canal for fluids.
VIABLE. Sufficiently developed to be capable of living.
VIBRIONES. A family of minute organisms.
VICARIOUS. Taking the place or office of another.
VILLI. Minute papillary elevations on a membrane.
VIRUS. Organic poison; the contagion of disease.
VISCERA. The contents of the abdomen, thorax, or head.
VISUOS. One of the internal organs.
VITAL. Pertaining to life.

VIVISECTION. The dissection of an animal while alive.
VOLATILE. Capable of easily evaporating.
VULVA. The labia externum.
WHITLOW. A felon ; an inflammation near the bone at the end of the finger.
WISDOM TEETH. The last of the molars to appear.
WOUND. A hurt or breach of the skin and flesh of an animal.
ZYMOTIC. Caused by something that acts as a ferment.

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